

# Maui Impact Fee Study

Maui Policy Board Meeting

Rob Bostrom, PE  
Nathan Shay, PE,  
AICP

*November 29, 2021*



**CDM  
Smith**



# Overview

- Background
- Maui Travel Demand Model (TDM) Project Summary
- Maui Traffic Impact Fee Study (TIFS) Progress Overview
- Questions/comments

A glass globe containing a miniature green landscape with a palm tree, resting on a mossy surface. The globe is transparent and shows a reflection of the landscape inside.

# Maui Travel Demand Model Update

# Travel Demand Model Overview

- Update the Maui Travel Demand Model (TDM) to model current year (2019) and future years (2025, 2030, 2045) transportation demand on the island of Maui
- Update the Travel Demand Model (TDM) to support the Traffic Impact Fee Study. It can also be used for scenario planning, LRTP updates, environmental analyses and traffic impact studies
- Developed model update documentation and model users' guide
- Provided model training on August 9-10. Completed model on September 16 and delivered documentation on September 30<sup>th</sup>

# Modeling Next Steps

- Maui County may consider a modeling on-call contract to include:
  - Model runs as needed for MPO and County
  - Small model improvements as needed
- We recommend development of a model improvement plan for next five years, consider:
  - Any necessary data collection
  - Enhancements such as hourly volumes, development of population synthesizer or advanced modeling techniques
  - Determine when full model update is needed
- MPO may purchase low-cost Caliper product Maptitude for viewing files and for obtaining national level planning data



# Maui Traffic Impact Fee Study



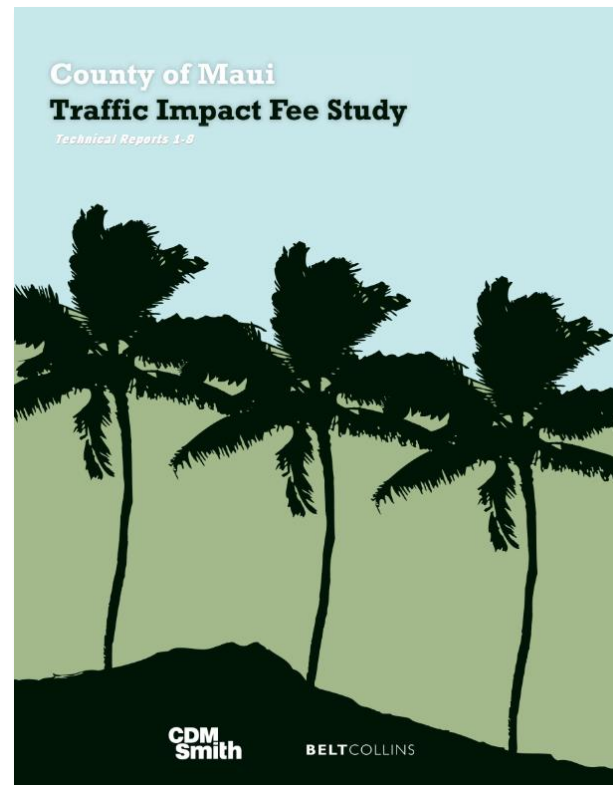
# Purpose of Study

- Update the 2013 Maui Traffic Impact Fee Study using:
  - Updated highway and transit networks
  - An updated Travel Demand Model
  - The MPO's Hele Mai Maui Long Range Transportation Plan as source for future projects
  - Updated framework tools and spreadsheets
- Produce updated report and present results to Maui County Council and MPO TAC and Policy Board



# Kickoff & Review of 2013 Report

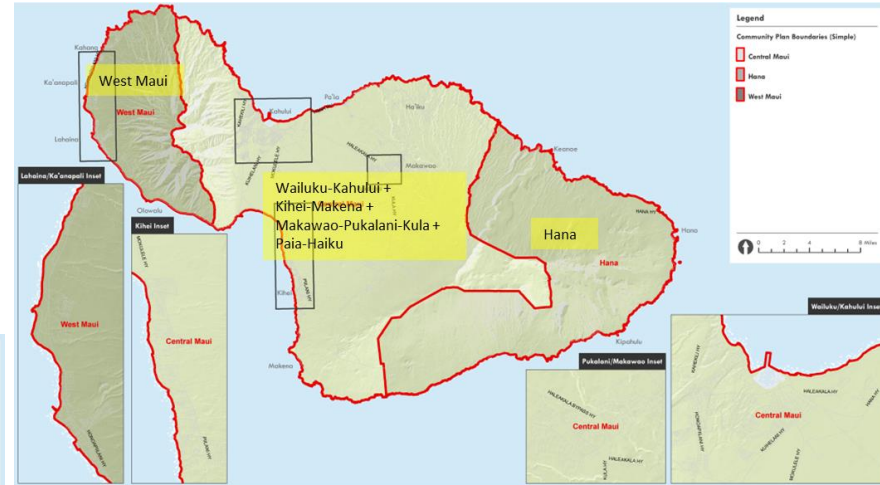
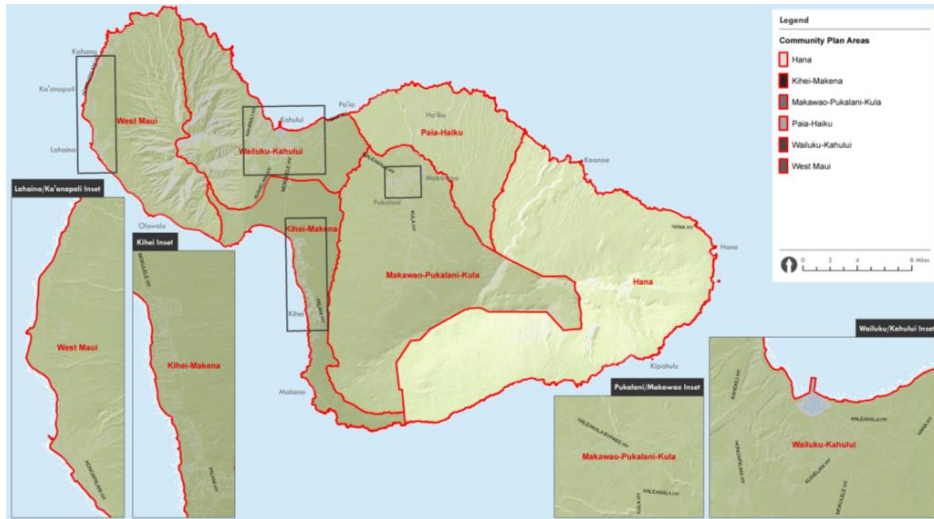
- Options for fee areas - Community Plan Areas, Aggregated, or Island-wide
- Transportation projects and cost estimate updates
- Land use and growth updates
- New planning period – 2019 to 2030
- State and local costs calculated separately





# Service Area Alternatives

- Island-wide
- Community Plan (CP) Areas
- Combined CP Areas

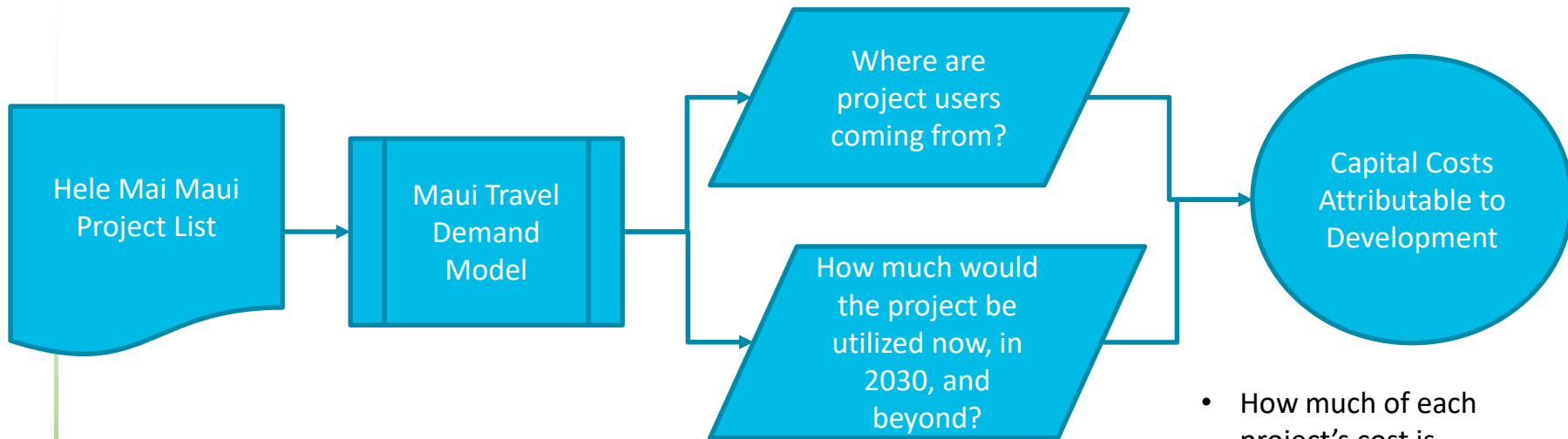




# Impact Fees Schedule Equation



# Cost Component Process



- How much of each project's cost is attributable to each benefit zone between 2019 and 2030



# Future Network - Long Range Transportation Plan

- Hele Mai Maui Long Range Transportation Plan source for new projects
- Specifically, projects that support growth





# 2019-2030 Planning Period and Growth Rates

- Project costs
  - Near (1-5yr) and Mid-term (6-11yr) projects were considered within the 10-year horizon
- Growth rates – using FHWA value of 3.07%/year

Project Type	No. of Projects	10-Year Horizon Cost (\$1000, 2019)	Beyond Horizon Cost (\$1000, 2019)
New Connections	12	\$342,372	\$43,664
Multi-Use Paths	7	\$22,967	\$36,963
Intersection Improvements	22	\$50,455	\$5,034
Complete Streets	18	\$72,698	\$534
Safety Corridors	10	\$86,193	\$140,000
Transit Improvements	9	\$63,000	\$50,000
Traffic Signal Modernization Program	1	\$35,000	\$-
Sidewalk Gap Program	1	\$6,325	\$4,675
Traffic Operations & Improvements Program	1	\$11,500	\$8,500
Bus Stop Siting, Upgrades, & Maintenance Program	1	\$5,750	\$4,250

# 2040 Improvements



Source: Hele Mai Maui



# Future Projects

## New Connections Included in Future Network

ID	Project Name	Project Type	Project Source	Project Area	Phasing	Modeling Year
C18	Imi Kala Rd Extension -- Wailuku	New Connections	Maui Island Plan	Central	Mid	2030
C2	Imi Kala Rd Extension -- Wai'ehu	New Connections	Maui Island Plan	Central	Long	2040
C3	Lono Ave Extension	New Connections	Wailuku-Kahului Community Plan	Central	Mid	2030
C4	Wai'ale Rd Extension	New Connections	DPW 6-year CIP, Federal-Aid Highways 2035 Plan	Central	Mid	2030
C12	Pa'ia Relief Route	New Connections	HDOT 2015-2035 Capacity Program	North	Mid	2030
C5	Kihei North-South Collector Road -- Phase 1A	New Connections	HDOT 2015-2035 Capacity Program, 2019-2022 Maui TIP	South	Near	2025
C7	Kihei North-South Collector Road -- Phase 1B	New Connections	HDOT 2015-2035 Capacity Program	South	Mid	2030
C6	Kihei North-South Collector Road -- Phase 2	New Connections	HDOT 2015-2035 Capacity Program, DPW 6-year CIP	South	Mid	2030
C8	Kihei North-South Collector Road -- Phase 3	New Connections	HDOT 2015-2035 Capacity Program	South	Long	2040
C10	Honoapi'ilani Hwy Realignment	New Connections	2019-2022 Maui TIP	West	Near	2025
C11	Lahaina Bypass Phase 1C	New Connections	HDOT 2015-2035 Capacity Program	West	Near	2025

# Use Model for Inputs for Impact Fee Calculation

- Where are project users coming from?
  - Roadway: Select-link
  - Transit & Non-motorized: location
  - Island-wide: Area trip growth





# Use Model for Inputs for Impact Fee Calculation

- How much would the project be utilized now (pre-2020), in 2020-2030, and beyond?

Imi Kala Rd Extension -- Wailuku					2030		DISTRIBUTION - BY LINK			DISTRIBUTION - BY PROJECT			
LINK NO.	LINK ID	Length (Mi.)	2019 Daily Volume	2030 Daily Volume	Capacity (v/c=1.0)	Capacity LOS D	Pct LOS D Capacity			WEIGHTED % LOS D Capacity			
							Pre-2020	2020-2030	Post 2030	Pre-2020	2020-2030	Post 2030	
1	6049	0.054	4,047	4,656	16,800	15,120	26.8%	4.0%	69.2%	6.3%	0.9%	16.3%	
2	6050	0.027	4,047	4,656	16,800	15,120	26.8%	4.0%	69.2%	3.2%	0.5%	8.2%	
3	6051	0.010	4,047	4,656	16,800	15,120	26.8%	4.0%	69.2%	1.2%	0.2%	3.0%	
4	6052	0.138	6,157	6,847	16,800	15,120	40.7%	4.6%	54.7%	24.5%	2.8%	33.0%	
<b>TOTAL:</b>		<b>0.229</b>	<b>MI.</b>								<b>35.2%</b>	<b>4.4%</b>	<b>60.5%</b>

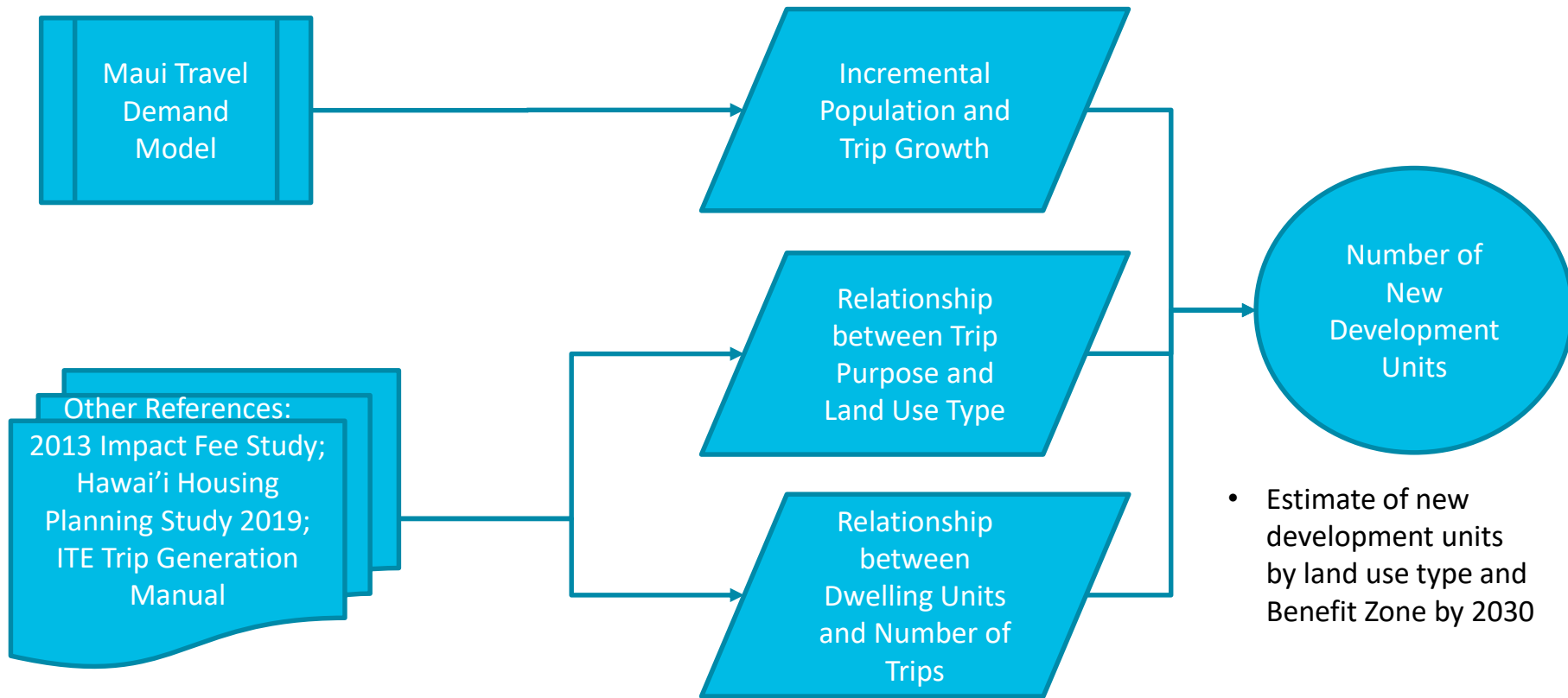


# Impact Fees Schedule Equation





# Development Unit Process



- Estimate of new development units by land use type and Benefit Zone by 2030

# Use Model for Inputs for Impact Fee Calculation

- Incremental trip growth by purpose

Trip Purpose	Change in No. of Daily Trips (2019-2030)
Home Based Work	+ 9,668
Home Based School	+ 4,626
Home Based Other	+ 26,621
Non-home Based	+ 16,114
Visitor	+ 28,371
Commercial Truck	+ 1,585
TOTAL	+ 86,986

# Understanding the Relationship between Trips and Land Use

- Trip purpose growth → trips per land use category → development units per land use category
- References:
  - 2013 Impact Fee Study
  - Hawai'i Housing Planning Study 2019
  - ITE Trip Generation Manual

NON-RESIDENTIAL LAND USE	PCTG. TOTAL EMPL by LU CATEGORY	PCTG. TOTAL EMPL by EMPL CATEGORY			PCTG. TOTAL LU AREA
		RETAIL	SERVICE	OTHER	
Office	30.34%	0.00%	81.00%	0.00%	15.90%
Retail	21.92%	100.00%	10.00%	9.00%	28.03%
Industrial	21.42%	0.00%	0.00%	44.00%	26.16%
Visitor Accommodation	18.82%	0.00%	0.00%	38.00%	22.99%
Institutional - Public	7.50%	0.00%	9.00%	9.00%	6.92%
<b>TOTALS</b>	100.00%	100.00%	100.00%	100.00%	100.00%



# Impact Fees Schedule Equation





# Impact Fees Schedule

Preliminary Results – rounded to nearest 10 dollars

**ISLAND- WIDE BENEFIT ZONE -- SCHEDULE 'A'**

IMPACT FEE COST AND LAND USE BASIS *** ISLAND-WIDE ALTERNATIVE ***		Residential - SF	Residential - MF	Commercial (Office + Retail)	Industrial	Visitor Accom- modation	Institutional - Public
		DU	DU	KGsf	KGsf	VU	KGsf
Local Project Costs	Impact Fee Rate	\$470	\$270	\$1,970	\$200	\$1,180	\$870
State Project Costs	Impact Fee Rate	\$380	\$220	\$1,620	\$160	\$960	\$710

- State projects provide for information only
- Should be noted that rates are lower than 2013 rates
  - 2013 study developed projects to attain LOS D or better on all roadways in the present, then in 20 years
  - Current study relies on LRTP so a higher proportion of future project costs are serving existing needs
  - LRTP contains more lower cost multimodal and safety improvements



## Next Steps

- After today's presentation
  - Finalize draft impact fees with County Review
  - Get approval for Addendum Report





## Questions/Comments



*Mahalo!*

