

Más Allá del Manual De Capacidad De Camino, Edición 2010

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Kittelson & Associates

El HCM 2010

- Cuatro volúmenes
 - Tres impresos, uno solamente disponible por la web
 - Salió en Enero 2011
- Métodos mejorados para
 - Tramos de entrecruzamiento en autopistas
 - Avenidas
 - Semáforos dentro de intercambiadores
 - Rotondas
 - Bicicletas, Peatones, y Buses

Investigaciones Después de 2010

- NCHRP 03-96: Carriles Especializadas
- NCHRP 03-107: Zonas de Obra
- SHRP2-L08: Análisis de Confiabilidad
- Gestión en Tiempo Real del Tránsito

NCHRP 03-96: Carriles Especializadas

- Carriles de vehículos de alta ocupación (VAO)
- Carriles de peaje (Express ó HOT Lanes)



WSDOT
www.wsdot.wa.gov/HOV

NCHRP 03-96: Carriles Especializadas

- Identificar medidas de desempeño
- Desarrollar métodos nuevos para el análisis
- La capacidad de carriles de VAO es 1600 veh/hr
- El informe final está en producción
- Para mas información:
 - Dr. Yin Hai Wang, yinhai@uw.edu

NCHRP 03-107: Zonas de Trabajo

- Análisis de la capacidad de zonas de trabajo y métodos de gestión



FHWA, <http://www.ops.fhwa.dot.gov/wz/>

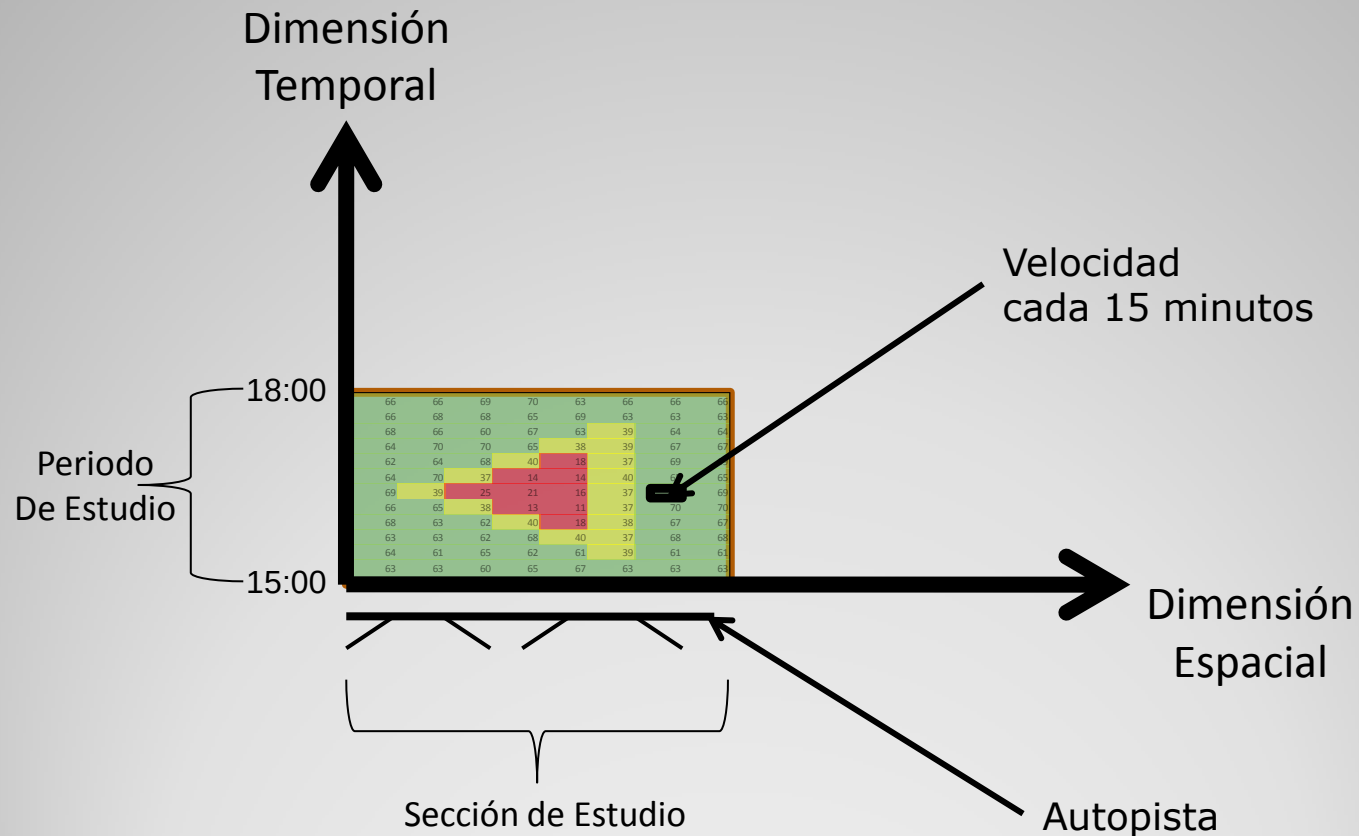
NCHRP 03-107: Zonas de Trabajo

- Definir la capacidad
- Identificar métodos para medirla
- Desarrollar métodos de análisis
- Mejorar la análisis en micro simulación
- Se cumple in los finales de 2014
- Para mas información:
 - Jim Schoen, jschoen@kittelerson.com

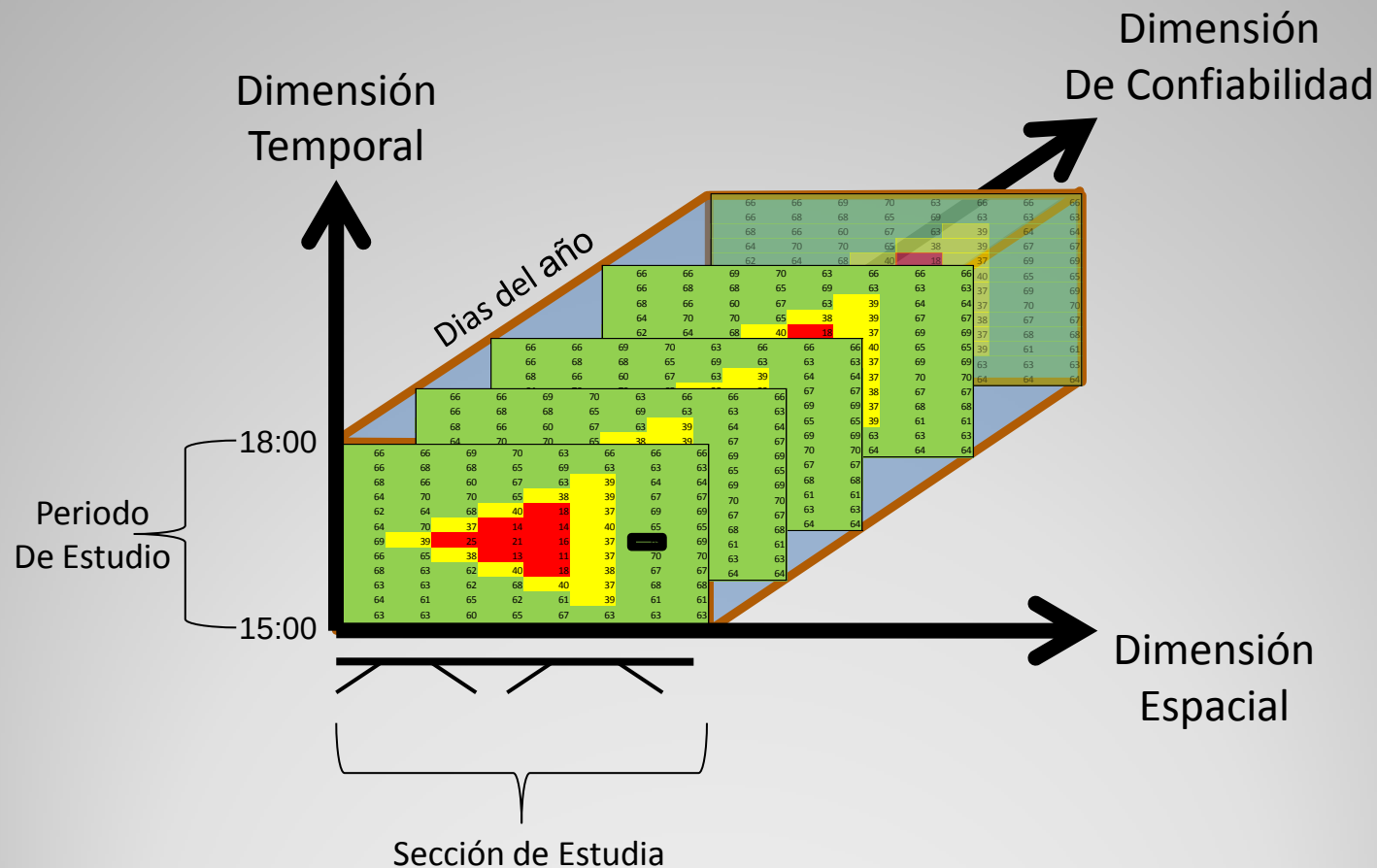
SHRP2-L08: Análisis de Confiabilidad

- Motivo: Crear unos métodos para analizar la Confiabilidad de la duración del viaje.
- El enfoque es la infraestructura de autopistas y avenidas urbanos.
- El informe final saldrá a finales de 2013.

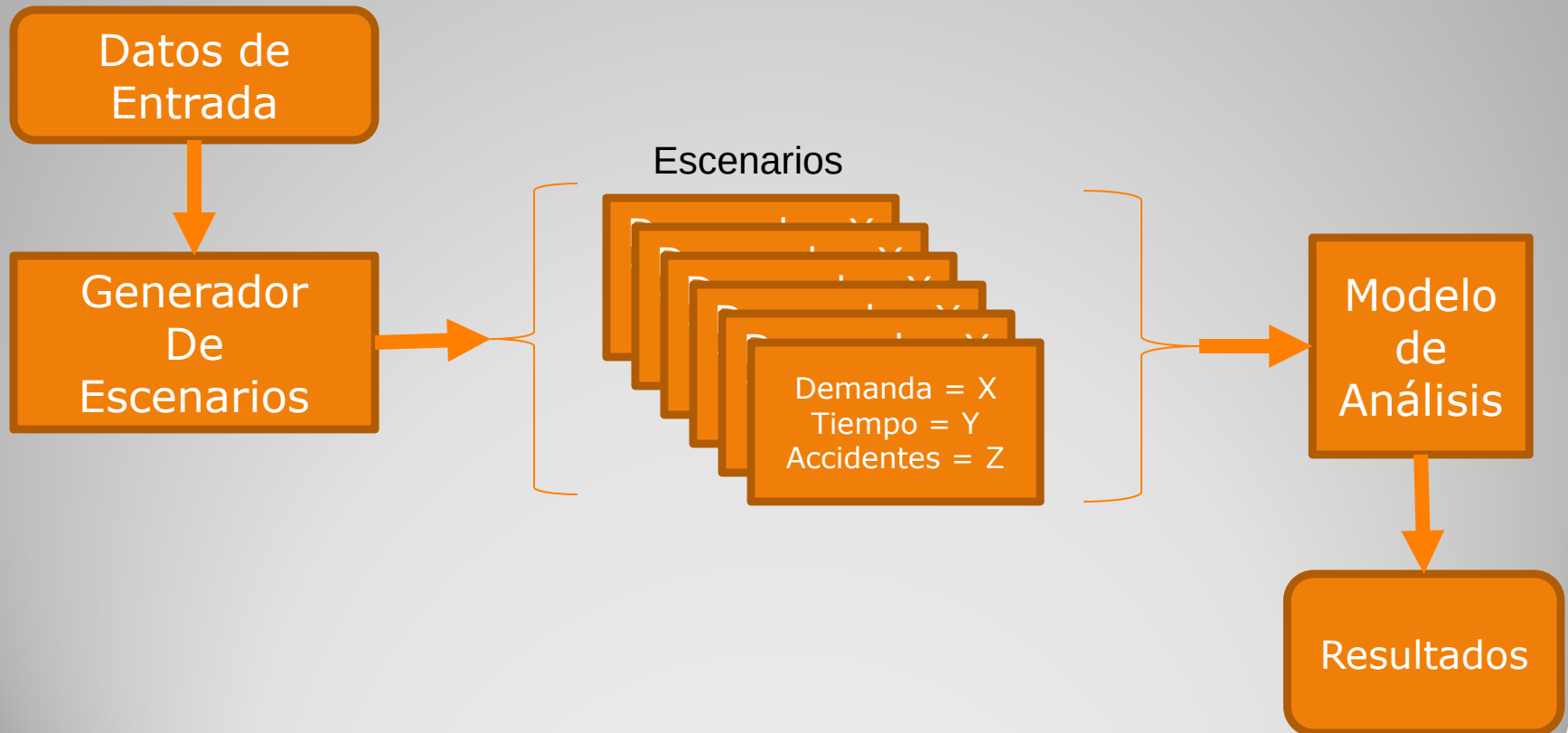
SHRP2-L08: Análisis de Confiabilidad



SHRP2-L08: Análisis de Confiabilidad (2)

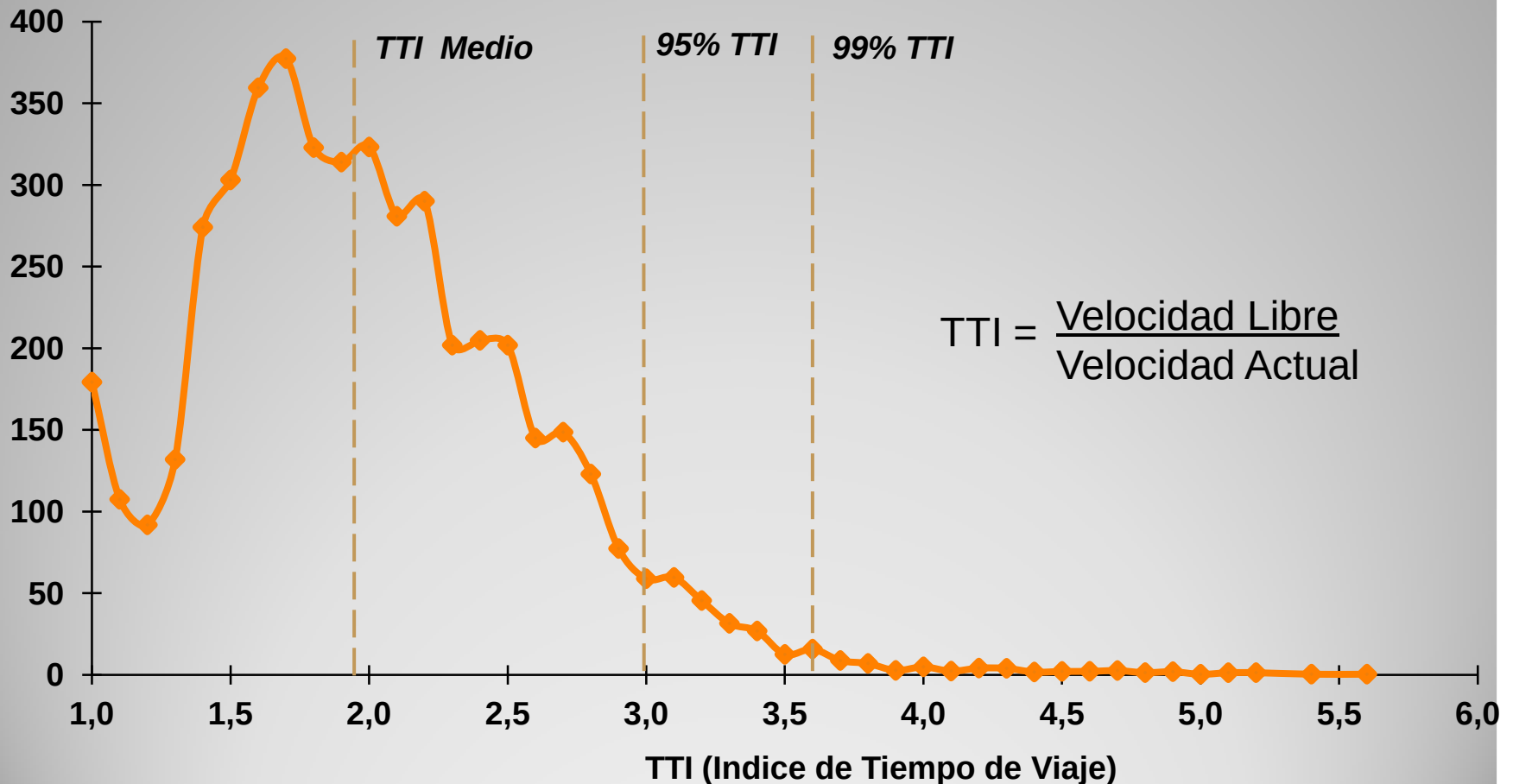


Análisis de Confiabilidad



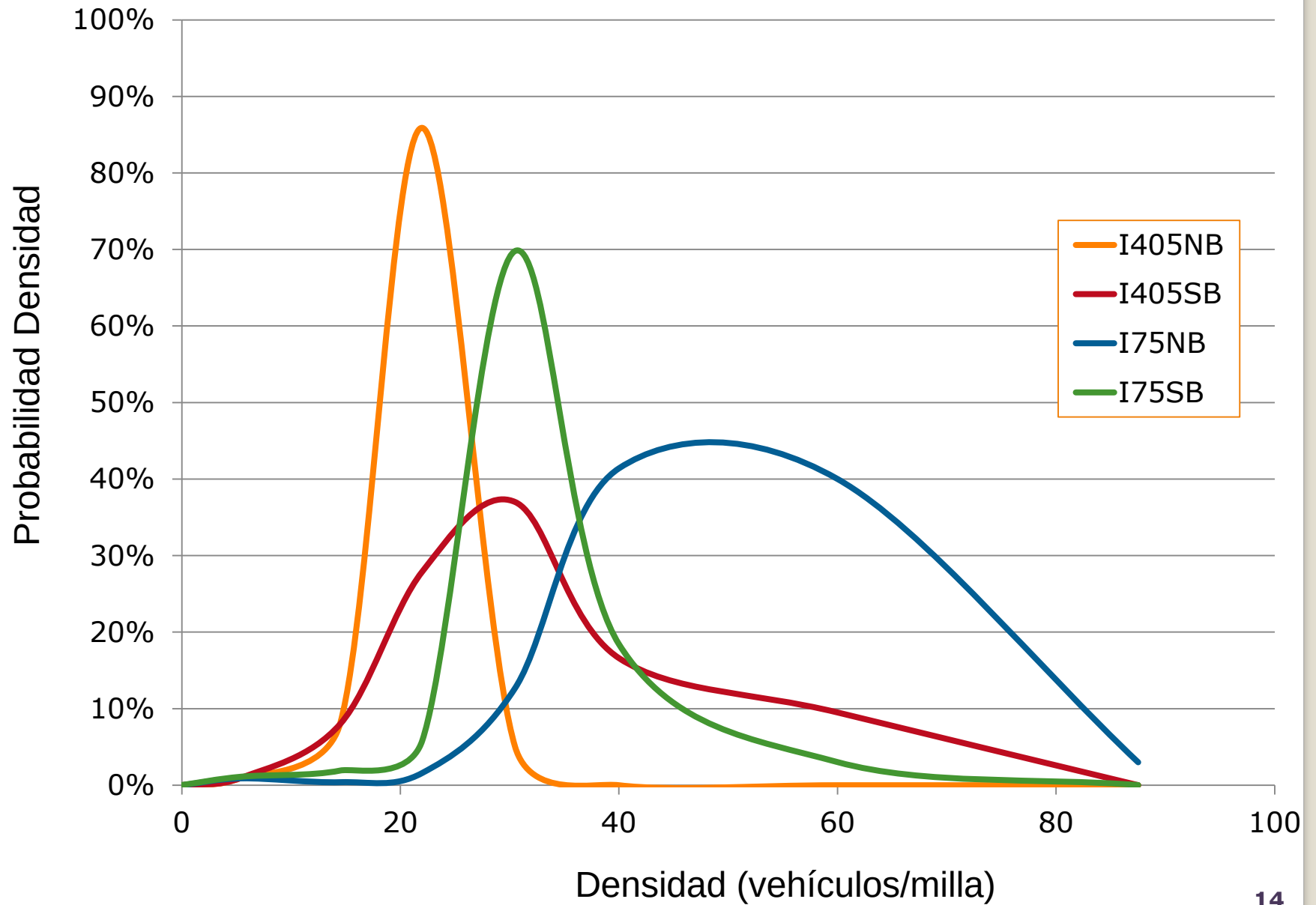
Distribución de Duraciones

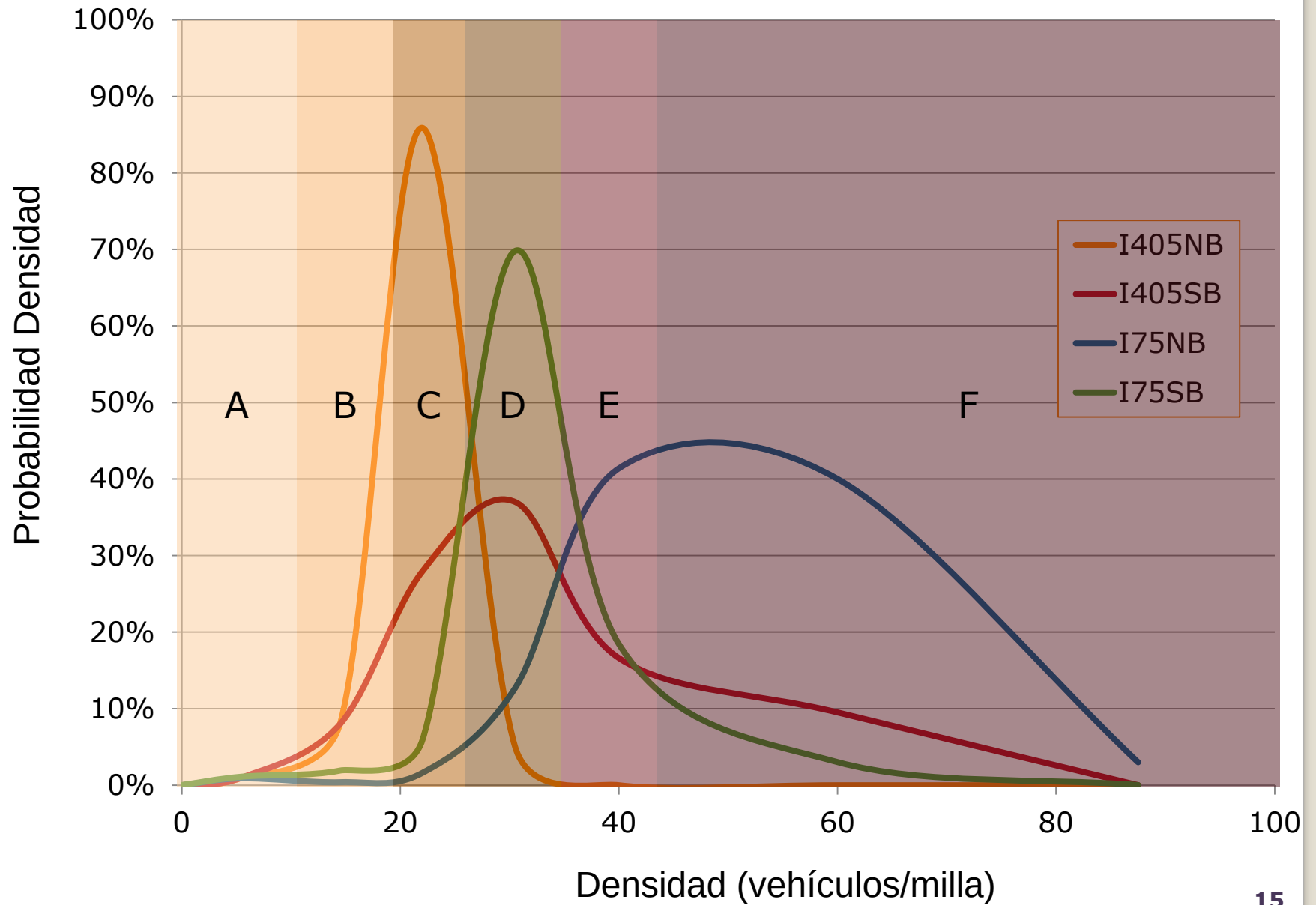
Viajes (en miles)



Nivel de Servicio y Confiabilidad

		Porcentaje de Viajes en Cada Nivel de Servicio			
		Seattle, I-405 (2007)		Atlanta, I-75, (2010)	
NDS	Densidad	NB	SB	NB	SB
A	<= 11	0.0%	0.0%	0.9%	1.1%
B	> 11--18	8.1%	1.4%	0.4%	1.9%
C	>18--26	91.6%	32.9%	1.6%	5.8%
D	>26--35	0.3%	34.0%	2.7%	69.8%
E	>35--45	0.0%	20.6%	4.7%	18.4%
F	> 45 or d/c >1.0	0.0%	11.1%	90.7%	3.0%
	Medio TTI	1.016	1.352	1.984	1.050





Como Mejorar la Confiabilidad?

- Aumentar la capacidad de la autopista
 - Es carísimo en los centros urbanos
- Mejorar la eficiencia de operación de las autopistas
 - Este es el motivo de Gestión en Tiempo Real (ATDM).

Gestión en Tiempo Real del Tránsito (ATDM)



Regulación Dinámico de Demanda



FHWA – Ramp Management and Control Primer

Tarifa de Congestión



FHWA, MinnDOT
Technologies that Complement Congestion Pricing Primer
Congestion Pricing Primer

Sistema de Información al Viajero

http://traffic.511.org/traffic_map.asp

File Edit View Favorites Tools Help

511 SF Bay Area

511.ORG TRANSIT TRAFFIC RIDESHARE BICYCLING

MY511: Login Register

Last refreshed: 8/25/2009 10:20 a.m.

Traffic Map with Driving Times
511 Driving Times™ (text version)
Traffic Information (text version)
Breaking News & Construction
Predict-a-Trip™
FastTrak®
Bay Bridge Seismic Retrofit Project
511 Driving Times™ Coverage
Carpool Lanes and Lots
Local Traffic Information
Traffic Partners
MY 511™

FEATURES & TOOLS

Map Refresh Rate: 3 min.

Need help? Visit the [User Guide/FAQ](#).
[Close this window](#)
[Bookmark this page](#)

Overview

Traffic Congestion

- No congestion
- Moderate
- Heavy
- Stop and go
- Closed
- No data

Standard Colors

Features Help

- Select this tool and then click on any map icon or roadway for more information.
- Select this tool to calculate driving times between two locations. (Not all routes are available yet.)

Map Tools Help

- Select this tool and then draw an area on the map to zoom in.
- Select this tool and then click on the map to zoom out.
- Select this tool and then click and drag the map to see a neighboring area.
- Select this tool and click on the map to re-center at that location.
- Click this tool to zoom out to the full map.
- Click this tool to refresh the map with the latest information.

Show/Hide

- ☒ Incidents
- ☒ Construction
- ☒ Events
- ☒ Cameras
- ☒ Traffic
- ☒ Base Map

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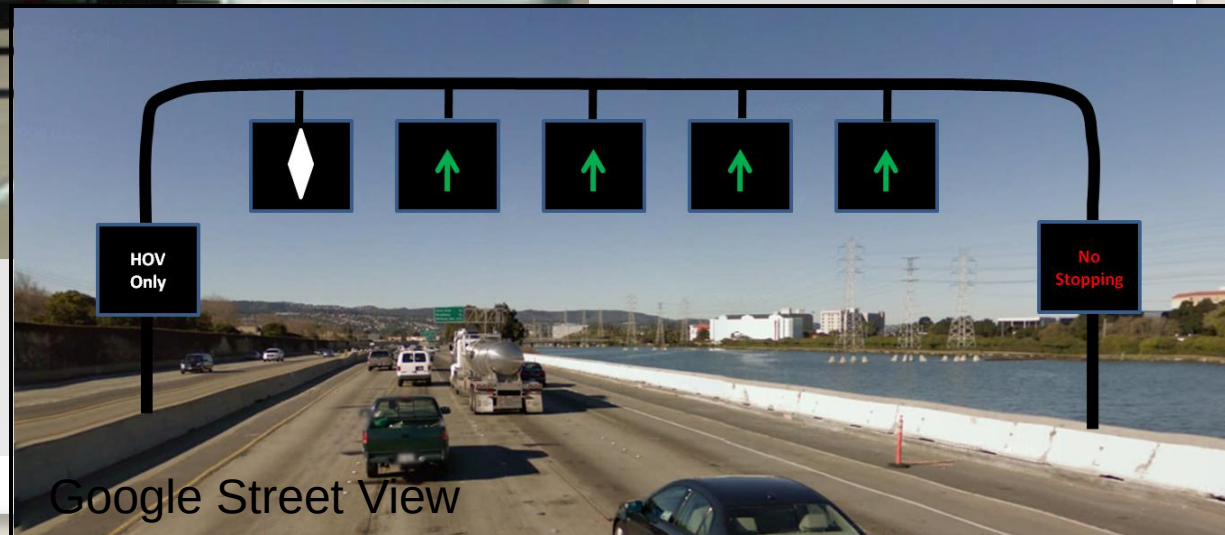
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Gestión de los Carriles y la Banquina



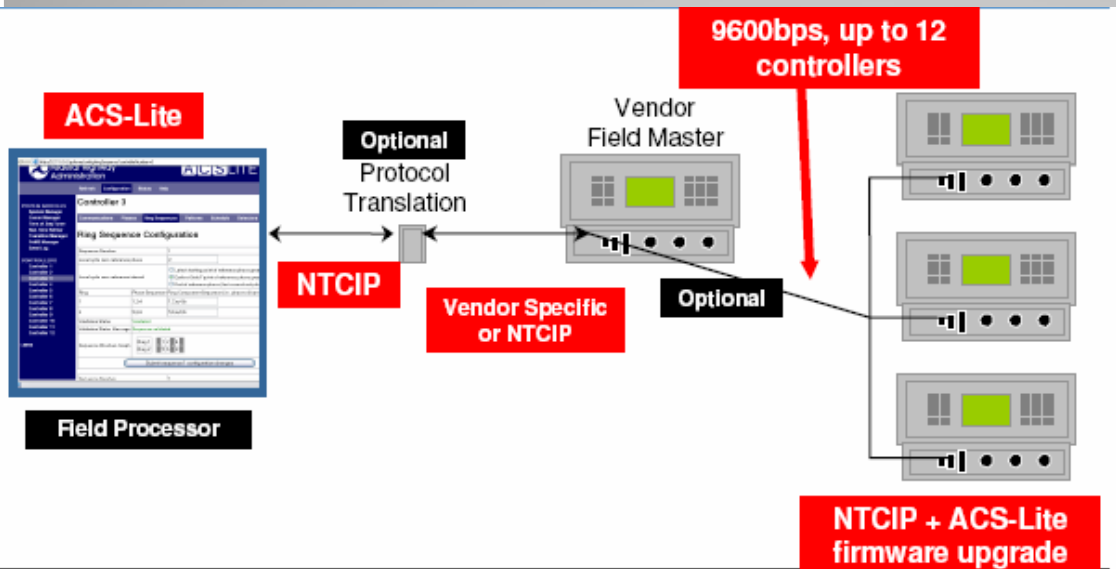
FHWA
Managed Lanes Primer

- Carril para vehículos de alta ocupación (HOV).
- Usa de la banquina en períodos punta

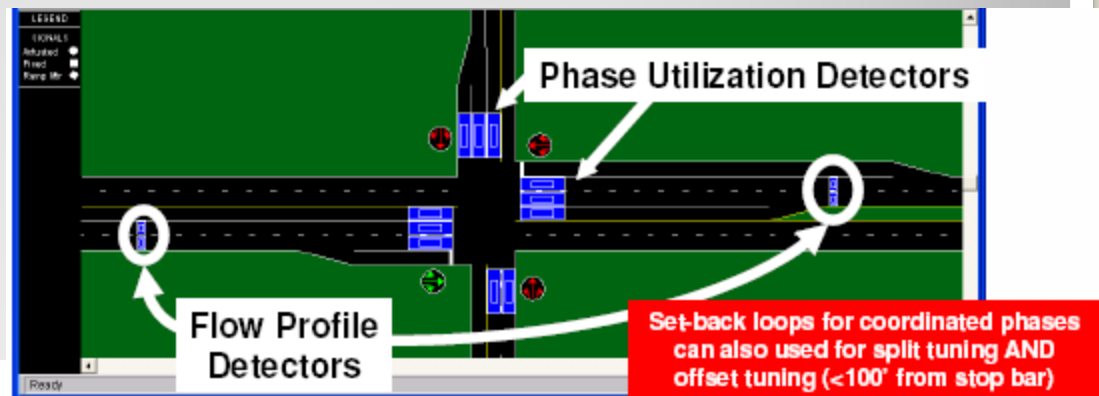


Google Street View

Semáforos De La Próxima Generación



Fuente: Doug Gettman
Siemens, FHWA
ACS-Lite



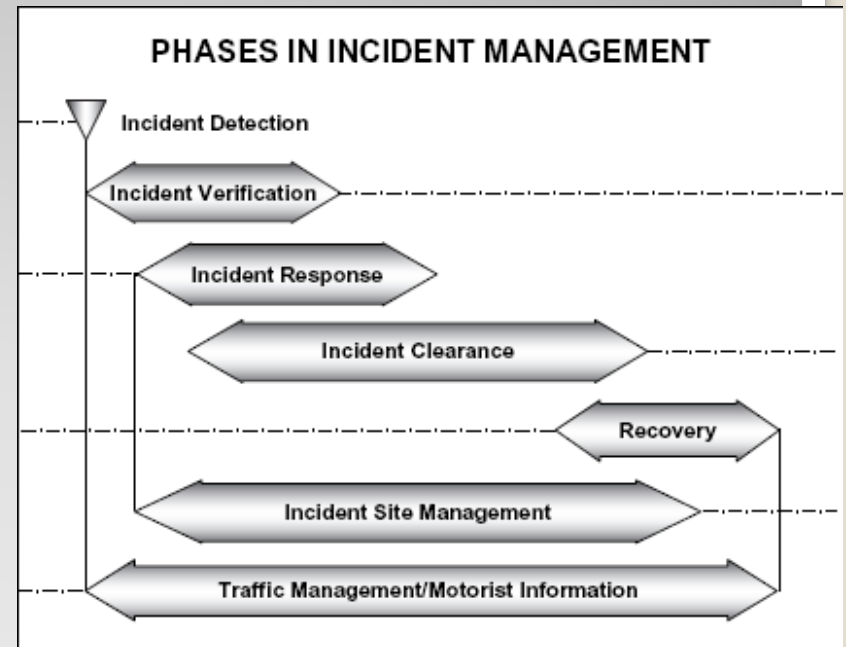
Uniformización de la Velocidad



Limites de
Velocidad
Variables

FHWA: Technologies That Complement Congestion Pricing

Gestión de Incidentes



Fuente: FHWA, Regional Traffic Incident Management Programs

Gestión de Zonas de Trabajo



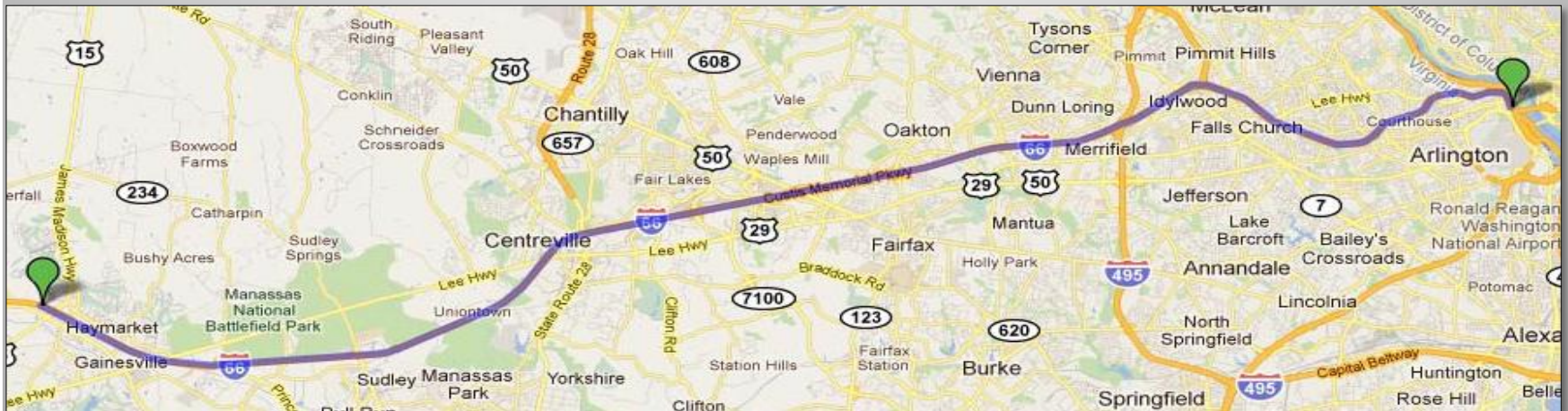
Fuente: FHWA, Benefits of Using Intelligent Transportation Systems in Work Zones

Gestión Dinámica: VDOT I-66

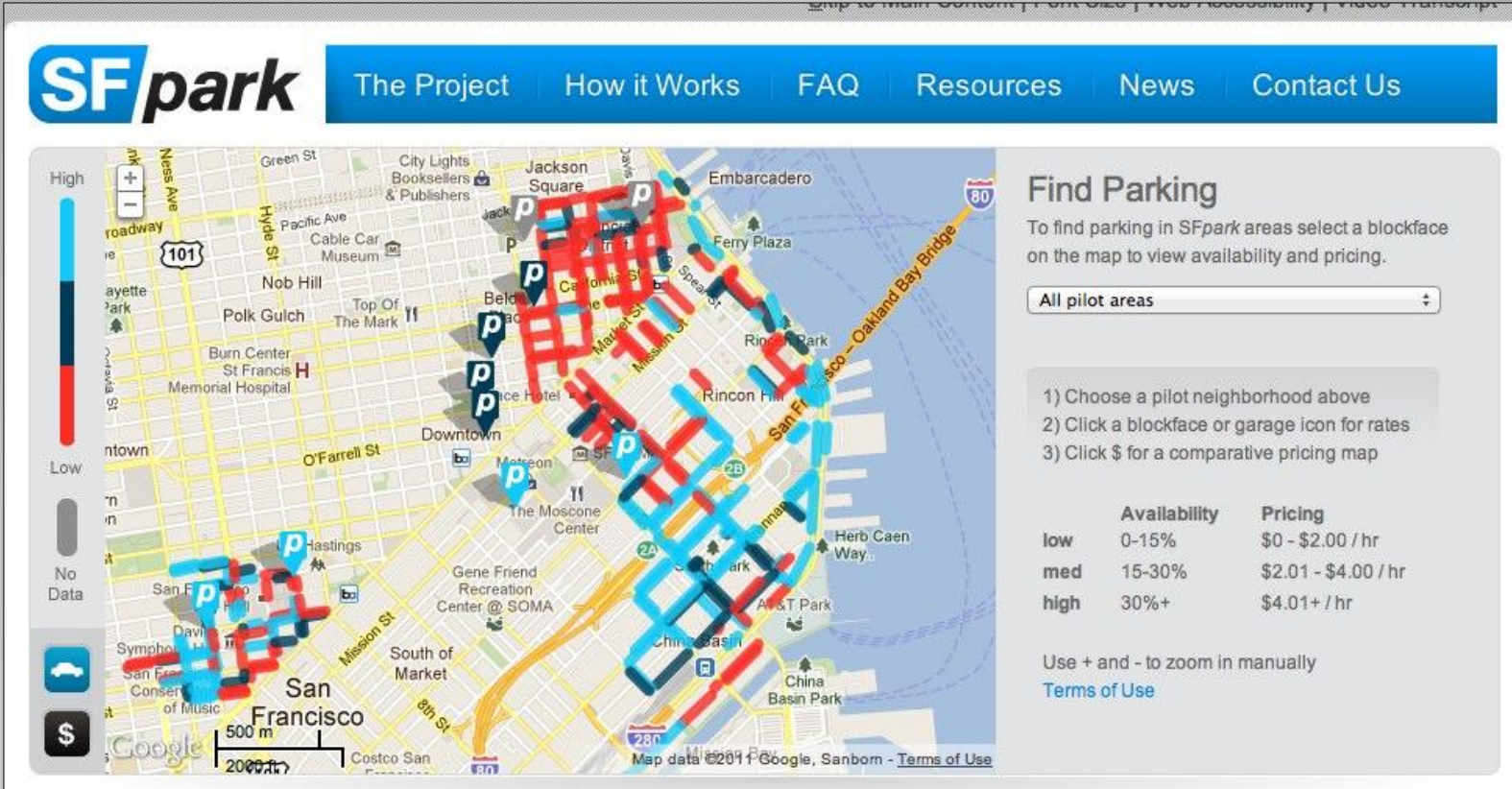


VDOT: I-66 Active Traffic Management System in Northern Virginia:

<http://www.youtube.com/watch?v=x-ZZKhaLRzI>



Gestión de Estacionamiento



The screenshot displays the SFpark website interface. At the top, the SFpark logo is on the left, and navigation links for 'The Project', 'How it Works', 'FAQ', 'Resources', 'News', and 'Contact Us' are on the right. The main content area features a map of San Francisco with various colored 'P' icons indicating parking availability. A legend on the left shows a color scale from 'High' (blue) to 'Low' (red) to 'No Data' (grey). On the right, a 'Find Parking' section provides instructions: 'To find parking in SFpark areas select a blockface on the map to view availability and pricing.' Below this is a dropdown menu set to 'All pilot areas'. A numbered list of three steps guides the user: 1) Choose a pilot neighborhood above the map, 2) Click a blockface or garage icon for rates, and 3) Click \$ for a comparative pricing map. A table below the list shows the pricing tiers: 'low' (0-15% availability, \$0 - \$2.00 / hr), 'med' (15-30% availability, \$2.01 - \$4.00 / hr), and 'high' (30%+ availability, \$4.01+ / hr). At the bottom right, there is a note to 'Use + and - to zoom in manually' and a link to 'Terms of Use'. The map itself shows major streets like Market St, Mission St, and the Embarcadero, with various landmarks and parking zones marked.

SFpark The Project How it Works FAQ Resources News Contact Us

Find Parking

To find parking in SFpark areas select a blockface on the map to view availability and pricing.

All pilot areas

- 1) Choose a pilot neighborhood above
- 2) Click a blockface or garage icon for rates
- 3) Click \$ for a comparative pricing map

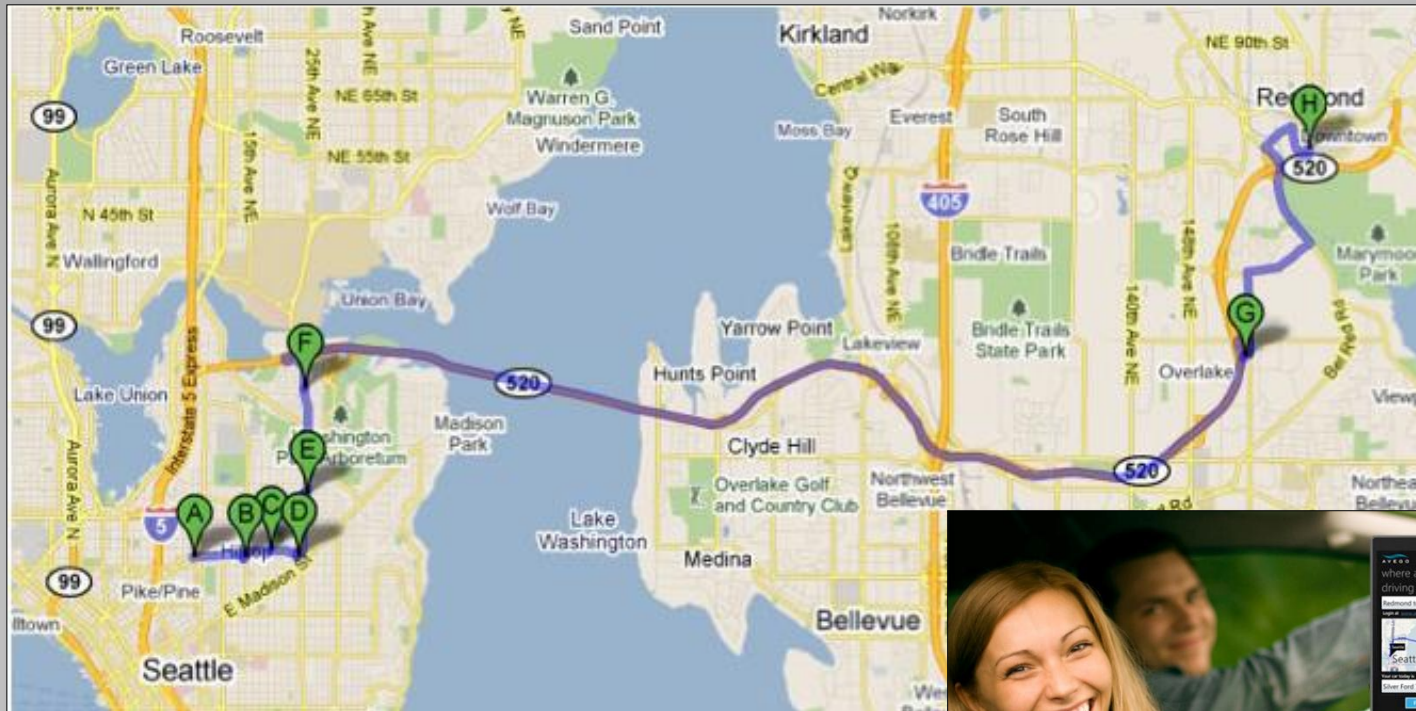
	Availability	Pricing
low	0-15%	\$0 - \$2.00 / hr
med	15-30%	\$2.01 - \$4.00 / hr
high	30%+	\$4.01+ / hr

Use + and - to zoom in manually
[Terms of Use](#)

SFPark: Un video para saber en donde estacionarse:

<http://youtu.be/9JVepZcA-GI>

Viajes Compartidos Dinámico



Avego Real-time Ridesharing Demo

<http://www.youtube.com/watch?v=P58Ug6JpdRU>

Programa Federal (FHWA)

- Fomentar la Gestión en Tiempo Real del Tránsito
- Habilitar agencias públicos:
 - Mejorar la confiabilidad del viaje,
 - Aumentar la seguridad y
 - Mejorar el rendimiento de los sistemas de transporte de superficie

Objetivos del Programa FHWA

- Aumentar el conocimiento y la comprensión.
- Desarrollar, probar y evaluar estrategias.
- Proporcionar métodos para el análisis de rendimiento.
- Proporcionar métodos para el análisis de costo y beneficio.
- Capacitar a las agencias para implementar sistemas eficaces.
- Proporcionar orientación a las oficinas de la FHWA

Programa FHWA ATDM



Enfoques de Investigaciones

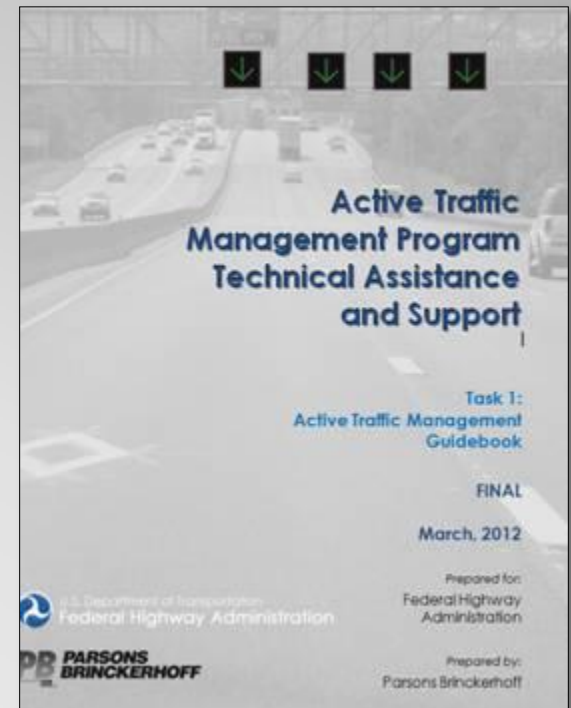
- Institucional, organizacional y política
- Planificación y diseño
- Análisis, modelado y simulación
- Tecnología
- Operaciones

Investigaciones

- Análisis, Modelado y Simulación (AMS)
- Manual de Capacidad de Caminos (HCM)
- Diseño de Operaciones
- Análisis de Coste-Beneficio
- Dispositivos de Control de Tránsito
- Seguridad
 - Límite de velocidad variable (VSL) con Sistema Automatizado de Ejecución (ASE) (Prueba en campo)
 - Estudio de Seguridad del Uso Temporal de la Banquina

Software y Orientación

- Guías
- Manuales de Gestión y Operaciones
- Informes estatales.
- Guías introductorias
- Memos del administrador



Transferencia de Conocimiento y Tecnología (KTT)

- Resúmenes de Información
- Guía de Recursos para Relaciones Públicas
- Sitio Web (en desarrollo)
- Reuniones e intercambios entre profesionales sobre:
 - Planificación, Diseño, Operaciones, Relaciones Públicas

Active Transportation and Demand Management

U.S. Department of Transportation
Federal Highway Administration

ATDM Program Brief: An Introduction to Active Transportation and Demand Management

What is Active Transportation and Demand Management (ATDM)?

ATDM is the dynamic management, control, and influence of travel demand, traffic demand, and traffic flow of transportation facilities. Through the use of available tools and assets, traffic flow is managed and traveler behavior is influenced in real-time to achieve operational objectives, such as preventing or delaying breakdown conditions, improving safety, reducing emissions, or maximizing system efficiency.

Under an ATDM approach the transportation system is continuously monitored. Using archived data and/or predictive methods, actions are performed in real-time to achieve or maintain system performance.

What are some examples of ATDM Approaches?

Active management of transportation and demand can include multiple approaches spanning demand management, traffic management, parking management, and efficient utilization of other transportation modes and assets.

An agency can deploy a single ATDM approach in order to capitalize on a specific benefit or can deploy multiple active strategies to gain additional benefits across the entire transportation system. Some example approaches include:

Active Demand Management	Active Traffic Management	Active Parking Management
Dynamic Ridesharing	Dynamic Lane Use Control	Dynamically Priced Parking
On-Demand Transit	Dynamic Speed Limits	Dynamic Parking Reservation
Dynamic Pricing	Queue Warning	Dynamic Way-Finding
Predictive Traveler Information	Adaptive Ramp Metering	Dynamic Parking Capacity

Why ATDM?

Simply put, more can be done with technology and existing assets by making a strategic commitment to actively manage the transportation system. Active management is a tactical approach to operating systems and technologies differently, focusing on applying more "hands on" and dynamic approaches through real-time and predictive analysis. ATDM creates an environment where the occurrence and effects of problems can be reduced.

ATDM builds upon existing capabilities and assets and enables agencies to leverage existing investments – creating a more efficient and effective system and extending the service life of existing capital investments. All agencies and entities operating transportation systems can advance towards a more active management philosophy.

While active management can be applied to any part of our transportation system (such as implementing dynamic pricing on a facility to manage congestion, or informing travelers of specific or compatible transit operations for their trip), it is most beneficial when the relationships and synergies to other parts of the system are considered. For example, an agency could apply adaptive ramp metering to improve freeway traffic flow. However, if the effect of ramp metering on connecting arterials is not considered or if dynamic actions to manage overall demand are not implemented, some of system-wide performance gains may be compromised.

Seattle I-5 Northbound Active Traffic Management – Source: Texas Transportation Institute

SF Park Parking Information Sign – Source: SF Streets Blog

Conclusión

- El Próximo Manual de Capacidad
 - Métodos para carriles gestionado
 - Métodos para zonas de trabajo
 - Métodos de análisis de confiabilidad
 - Métodos de mejorar la confiabilidad
 - Gestión en tiempo real de transito