



Managed Lanes

A Primer



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What are “Managed Lanes”?

A set of lanes whereby traffic is managed by any combination of:

- **Vehicle eligibility**
 - Trucks-only
 - truck-only (portions of I-5 in CA; other states are considering)
 - trucks restricted to L-lane, but cars may use too
 - Bus-only
 - HOVs
- **Pricing**
 - HOTs, Express Toll Lanes
- **Access Control**
 - peak hour use, reversible lanes




. . and

. . wherein, traffic volumes and speeds are proactively managed in response to changing conditions.

In a general sense, MLs can refer to any dedicated and restricted lane that is not a general purpose lane

Managed Lanes

A lane or lanes managed by any combination of:

Eligibility

Truck-only
 Bus-only
 Occupancy (HOVs)
 Permits (Hybrids, et al)

Access Control

Peak Hours
 Reversible lanes

Price

Tolls

"By any other name" . . HOV; HOT; Express; Value-priced; bypass; etc.

What are some ML *strategies*?

Provide trip reliability

Regulate volume (hence, congestion)

Separating either heavy vehicles (trucks) or time-dependent services (buses) or permitted vehicles (HOVs, hybrids, etc.)

What are some ML *goals*?

Traffic management

- Optimize capacity
- Manage volumes, conditions, congestion

Generate revenue

- Pay for the lanes themselves (first)
- Pay for transportation enhancements in the region

Provide travel choices

- Opportunity for a faster, more reliable trip

Enhance transit service

- Exclusive lanes to separate from congestion, and to provide self-reliable trips

Some Operating ML Facilities			
State	Region	Facility	
CA	Orange County San Diego San Francisco San Jose	SR-91 I-15 I-680 SR-237 / I-880	2 Expr-lanes each way; "FasTrak" HOT lanes; "FasTrak" HOT lanes; "FasTrak" Opened 3/2012; HOV-to-HOT; "FasTrak"
CO	Denver	I-25	Some HOV, some HOT. Veh's must separate to declare
FL	Miami	I-95	21 miles (7.3 open now) ; "SunPass"
GA	Atlanta	I-85	16 mi; HOV-to-HOT; "PeachPass"
MN	Minneapolis Minneapolis	I-35W I-394	Since 2009; 16 mi; "MnPass" Since 2005; 11 mi; "MnPass"
TX	Houston Houston Houston	I-10 (Katy) I-45 South US 290	12 mi. HOT Single-la; reversible flow, 15.5 mi. Single-la; reversible flow, 14 mi.
UT	Salt Lake City	I-15	40 mi., HOT la; zone pricing
WA	Seattle	SR-167	Since 2008; 9 mi. HOT
WA	Seattle	I-5	Reversible lanes & HOV
VA	Northern VA	I-495	\$2.1B PPP; 14 miles; "EzPass"

Planned Priced-MLs	
CA (2), CO, FL (I-595 Ft. Lauderdale), MD, TX (5), UT, WA	

I-95 Express Lanes in FL

What makes them "Managed Lanes"?

- **Purpose**
 - ❖ Favor Long trips, not local trips
- **Eligibility**
 - ❖ Toll-paying customers (SunPass)
 - ❖ Exemptions
 - Registered vanpools, buses, hybrids, 3+ carpools
 - Motorcycles (no registration needed)
- **Cost**
 - ❖ Dynamic pricing (electronic collection only, no cash)
 - Varies from \$0.25 to \$7.00; average = \$2.75 to \$4.75
- **Locality**
 - ❖ Miami-Dade county (open); Broward County (pending)



REGISTERED CARPOOLS FREE
SUNPASS ONLY
TO 826 \$ XX.XX
TO 505 XXXXXX
CASH NOT ACCEPTED



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What is needed vis-à-vis Planning and Implementation?

- Pre-Planning (MPO, city, region)
- Planning (authority: DOT or consortium)
- Design (owner-agency)
- Construction
- Operation and Maintenance (enforcement, regulatory agency, partners: ride-share)

How much \$\$ to operate ML's?

"1st" revenues shall be used to cover operating expenses.

"2nd" revenues shall be used to recoup initial investment.

"3rd" revenues may be used to finance other transp-needs in region.

Facility	Region	State	Annual Revenues	Annual Operating Costs
SR-91	Orange Co.	CA	\$41,246,000	\$22,380,000
I-95	Miami	FL	\$14,790,000	\$7,630,000
I-25	Denver	CO	\$2,400,000	\$1,500,000
I-10	Houston	TX	\$8,000,000	\$2,370,000
I-394	Minneapolis	MN	\$1,600,000	\$961,000
I-15	Salt Lake City	UT	\$500,000	\$500,000

Source: FHWA *Priced M L Guide* 2012 (Parsons Brinkerhoff)
Numbers are circa 2010

Common Challenges for MLs

- **Technical**
 - MLs are complex to build, operate, and use
 - Decisions on access points & service
 - Much ITS is required
- **Public Acceptance**
 - Consensus building is critical!
 - Tolling and equity are always hard sells
- **Institutional**
 - Educating the public how to access & use the lanes
 - Legislation may be required
 - Compatibility with other statewide or region-wide facilities
- **Policy Decisions**
 - A "Concept of Operations" is usually needed
 - Design standards (e.g., median separated?)

Some Sticking Points

- **What will be the toll collection methods?**
 - Tolls must be collected automatically - no booths
 - What toll algorithm will be used?
- **Does toll legislation authority exist?**
 - Often, a toll authority or commission may be needed
- **Interoperability**
 - A single account should be used on multiple facilities
 - MAP-21 will mandate a national standard
- **Enforcement**
 - Critical !!
 - "Buy-in" from courts and police is needed
 - Cost of enforcement can be from tolled revenue
 - Safety of enforcement stops and visibility of enforcement

Lessons Learned

The top drivers of low toll traffic and low revenue forecasts are:

- *Poorly estimated 'Value of Time' (VOT) and 'Value of Reliability' (VOR)*
- Economic downturns
- Additional competition (improvements to transit or new roads)
- *High variability in traffic volumes (by ToD or DoW)*
- *Complexity of the tolling regime*
- Use of a travel demand model developed for other purposes
- Motorist education (and/or public scrutiny of project)

These three are particularly applicable to Managed Lane projects



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Of course, not everyone agrees . .



FREEDOM OUTPOST Don't Tread on Us

March 19, 2013 by XXXXXXXXXXXX

No Where To Turn - HOT Lanes & Other Insanities

Recently I was asked to help with an effort just north of Charlotte to stop *yet another ludicrous project* by transportation departments. Along the way, as I've researched this project my inbox has

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Updated: 7:49 a.m. Monday, Oct. 3, 2011 | Posted: 6:22 p.m. Monday, Sept. 19, 2011

Are HOT lanes a good idea for Georgia highways? No

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Your view

No: Goal should be better transportation for all, not just for select few.

Opinion: A good idea



Federal Oversight (MAP-21)

- Section 129 -- General Tolling Program
 - Speaks to either Initial construction or Reconstruction
- Section 166 -- HOV/HOT Lanes
 - Defines exemptions and allows HOV-to-HOT conversion
 - Mandates operational sufficiency and annual reporting if HOT
- Value Pricing Program
 - Encourages implementation and evaluation projects
 - Limited to 15 slots (7 are permanently reserved for state agencies that have already executed tolling agreements)
 - MAP-21 - no more \$\$, but authorizations continue
- Express Lanes Demonstration Program
- Interstate System Construction Toll Pilot Program
 - Both of these programs effectively expired under MAP-21 (now §129)

Some other Federal Oversight Tenets

- "Do not convert a GP lane to a special purpose lane" is a *general* tenet
- Exempted vehicles on HOV lanes may be
 - Motorcycles and bicycles (although safety certifications mostly repeals bicycles)
 - Public transportation vehicles
 - SOV's
 - May be tolled
 - There must be a program to establish enrollment, et al
 - Low emission and energy-efficient vehicles
 - May be tolled or untolled
 - Vehicles must be pre-selected and qualified
 - Exemptions to run through Sept. 30, 2017
- Any HOV lane that allows SOV's &/or ILEVs must annually certify performance sufficiency
 - 45+ MPH for 90 percent of time over 180-day period, peak hours
 - If insufficient, then steps must be taken to correct

