

Increasing Usage of Carpools and Van Pools – Data from the Tel Aviv FastLane in Israel

Rimon Rafiah¹, Shuki Cohen²

¹ Economikr, Israel; ² MATAT Transport Planning Center, Israel;

1. Introduction – the Fast Lane

- The fast lane is a separated, managed lane, extending from Ben Gurion International Airport to the Ayalon Freeway, at the entrance to Tel Aviv, the major economic and financial center of Israel.
- It is about 8 miles (13 kilometers) long, and was opened on January 9th, 2011.
- It is the first project of its kind in Israel – and the only project whose toll subsidizes 2 free shuttle lines from a dedicated park-and-ride facility to Tel Aviv.
- The Fast Lane is comprised of two segments – from Ben Gurion Airport to the park-and-ride facility (first segment) and from the park-and-ride facility to Tel Aviv (second segment).

2. Major Fast Lane Features

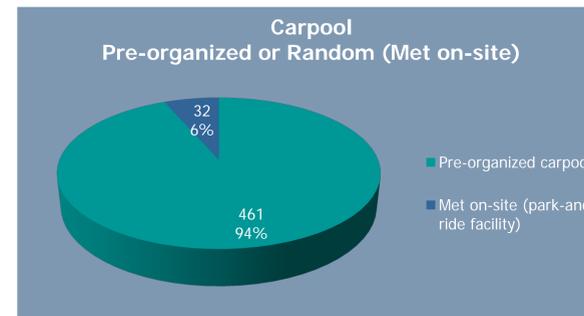
- **Cost of usage (Toll)** – variable toll, dependent on lane occupancy (including HOV), ranging between \$1.8 to \$24.7 (between \$0.2 and \$3.1 per mile).
- **HOV Usage Paid by Government** – depending on the time of day, it can be 3 people or 4 people (including the driver) – i.e. buses and minibuses are free for use. The operating company receives payments for these HOV from the Government of Israel.
- Has **electronic signs** mentioning the current cost of using the lane, and the LOS of Highway No. 1 (Jerusalem – Tel Aviv Highway), its main competitor, which is not tolled.

3. Park-and-Ride Facility w/HOV Toll-Plaza

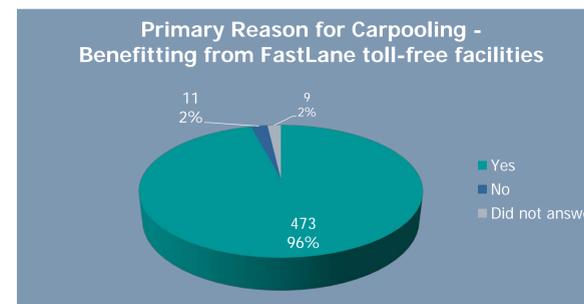
- Has about 2,000 parking spaces next to Shappirim Interchange. Parking is **free** for non-overnight parking (to prevent long term parking due to its proximity to Ben Gurion airport).
- Kiss-and-ride and pick-up of passengers from the parking lot is allowed, without toll payment on the first toll segment.
- **HOV “toll-plaza” facilities for toll exemption – perfect for data collection of road users who wish to use the FastLane as an HOV lane.**
- The park-and-ride facilities are accompanied by 2 **free-of-charge** shuttle rides to central locations in Tel Aviv. Operational between Sunday and Thursday, from 6:30 AM to 11 PM (no operation on holidays/holiday eves). Shuttle frequency – every 15 minutes or until shuttle is filled (5 minutes during peak hour periods).

4. HOV Surveys

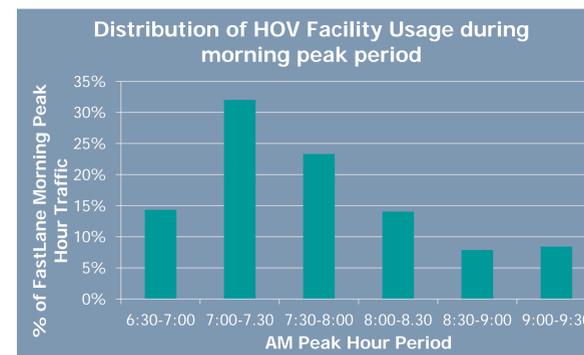
- Two surveys were conducted – an initial one on two working days in March 2013, and a more detailed survey in June 2014. Most of the data refers to the 2014 survey. The number of HOV vehicles receiving exemption were 712, on two days, between 6:30 AM and 9:30 AM. Out of these 712, 493 drivers were surveyed (almost 70%).



- **Vast majority organized in advance**
- **Some people stop at bus stations and take passengers in order to meet HOV requirement**
- **Very few organize on site at the facility (probably due to the existence of shuttle rides)**



- **Vast majority of carpoolers did so to meet HOV requirements (i.e. not pay the toll)**



- **Peak of the peak period occurs between 7 and 7:30 AM**
- **Classic rise to peak and diminishes from there – appears also in carpool users**

5. Increasing Usage of HOV Feature

- Carpools along the Tel Aviv Jerusalem Highway existed before the FastLane – estimated in 2008 at about 50 vehicles per hour in the morning peak hour period.. This number increased to more than double in 2014 (averaged about 120 vehicles per hour).
- Between March-November 2011 (first year of opening) the average daily use of the HOV facility was about 250 vehicles a day with 3 or 4 occupants, including the driver.
- In 2012, 2013, 2014, there was an increase of 40%, 17%, 11% respectively, in year-on-year terms.
- Comparing between the 2013 and 2014 surveys presented the following phenomenon:
 - Pre-organized carpools remain the vast majority (random meet-ups at the Fast Lane parking lot remained between 6% and 7%).
 - In 2013 there were 641 vehicles queueing up to the toll-exemption plaza, in 2014 there were 712, representing an increase of 11%, in line with the year-on-year data.
 - In both 2013 and 2014, the hour of peak HOV activity did not coincide with the period of the highest toll – it seems that people possibly plan their carpool without regard to the toll level at that time. This was also apparent in non-scientific interviewing of people at the bus stops, going in the direction of Tel Aviv who are potential FastLane users.

6. Conclusions

- Managed lane with dedicated parking, HOV facility and **free** shuttle ride – first of its kind.
- People use the HOV facility, at increasing rates over time during the peak morning period – usage rate more than doubled between 2008 (estimated before FastLane existence) and 2014 – 50 to 120 vehicles per hour in peak morning period.
- Carpooling is not random – most are pre-planned, including some random activity (drivers going around bus stations in peak morning period offering rides utilizing the shuttles).
- These carpoolers have a higher vehicle ridership rate, therefore more people are using the same infrastructure, thus lessening congestion. The carpoolers and shuttle users both together lessen congestion on the Jerusalem – Tel Aviv Highway.
- Was conceived as a bus priority lane into Tel Aviv and “selling capacity” to non-HOVs. This “sold capacity” created a revenue stream which funds the free shuttle rides.
- Is being considered for 2-3 additional locations in Israel.
- Serves as a possible model for increasing vehicle ridership, in other locales in Israel (currently under research in Israel).