How the 1984 Los Angeles Olympics motivated change and what to expect this time

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Outline

• What the Olympics means to the host city
• Context: LA then and now
• The 1984 Olympics – what worked and why
• Lessons for 2028
What the Olympics means to the host city

- World stage
  - 2016 Rio Olympics: 3.6 billion viewers
- High risk
  - What if something goes wrong?
  - How much will it cost?
- LA as traffic jam capitol of the US
- Strong incentives for taking action
  - Everyone has a stake in the outcome
  - BAU not enough
### LA then and now

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>2020</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>10.7 million</td>
<td>19.5 million</td>
<td>82</td>
</tr>
<tr>
<td>Employment</td>
<td>4.65 million</td>
<td>8.6 million</td>
<td>85</td>
</tr>
</tbody>
</table>

By 2028, population and employment will nearly double from 1984 level

<table>
<thead>
<tr>
<th></th>
<th>1984</th>
<th>2017</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average delay per auto commuter (hours)</td>
<td>61</td>
<td>119</td>
<td>95</td>
</tr>
<tr>
<td>Annual total delay (hours)</td>
<td>347 million</td>
<td>971 million</td>
<td>180</td>
</tr>
<tr>
<td>Annual total delay cost</td>
<td>$3 billion</td>
<td>$19 billion</td>
<td>533</td>
</tr>
</tbody>
</table>

Massive worsening of congestion likely to continue

Source: US Census, Southern California Association of Governments

Source: Texas Transportation Institute
<table>
<thead>
<tr>
<th>Mode</th>
<th>1990</th>
<th>2000</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive alone</td>
<td>70.1</td>
<td>70.0</td>
<td>73.7</td>
</tr>
<tr>
<td>Carpool</td>
<td>15.5</td>
<td>15.1</td>
<td>9.6</td>
</tr>
<tr>
<td>Public transit</td>
<td>6.5</td>
<td>6.6</td>
<td>6.3</td>
</tr>
<tr>
<td>Work at home</td>
<td>2.7</td>
<td>3.5</td>
<td>5.3</td>
</tr>
<tr>
<td>Walk</td>
<td>3.3</td>
<td>2.9</td>
<td>2.7</td>
</tr>
<tr>
<td>Other</td>
<td>2.8</td>
<td>1.9</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Despite worsening traffic, a consistent trend of more driving alone is observed. There is no indication that the transit market share is increasing.

Source: Calculated from US Census data
Some new opportunities

- Smart traffic management technology
  - Dynamic traffic signal and ramp systems
  - Big data – GPS tracking in real-time
  - Dynamic route guidance
- Integrated public transit services
  - Integrated fare systems
  - Dynamic route guidance
  - Integration with ride-hailing, bike share, scooters
- Work at home or remote locations
  - Much improved communication technology
  - Shift to more “footloose” occupations
• 2028 Olympics demand will be overlaid on much more congested system
• Options for increasing system capacity limited
• Large shift to public transit by resident population unlikely
## 1984 Olympics strategy

<table>
<thead>
<tr>
<th>Demand</th>
<th>Spectators</th>
<th>Non-spectators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transit marketing and incentives</td>
<td>Work scheduling</td>
</tr>
<tr>
<td></td>
<td>Work absences</td>
<td>Non-work travel</td>
</tr>
<tr>
<td></td>
<td>Work mode choice</td>
<td>Truck traffic</td>
</tr>
</tbody>
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<table>
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<tr>
<th>Supply</th>
<th>Spectators</th>
<th>Non-spectators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event scheduling</td>
<td>One way streets</td>
<td></td>
</tr>
<tr>
<td>Olympics transit service</td>
<td>Ramp closures</td>
<td></td>
</tr>
<tr>
<td>Olympics HOV system</td>
<td>Dynamic traffic signal system</td>
<td></td>
</tr>
</tbody>
</table>
What worked and what didn’t

Most effective
- Event scheduling
- Spectator transit use
- Absence from work
- Reduce non-work trips

Moderately effective
- Work schedule change
- Reduce truck traffic
- ATSAC

Not effective
- Work mode choice
- One way streets
- Ramp closures
Major events were scheduled to not overlap with peak hour, other nearby major events.

Olympics transit system was an entire addition to existing service, designed specifically to serve major venues.

Firms encouraged employees to work at home, take vacation.

Non-essential travel was reduced in fear of major traffic problems.
Flexible arrival and departure times help to spread the traffic, but does not eliminate trips.

Truck traffic constitutes a small share of total traffic, and only local deliveries could be shifted to night.

ATSAC allowed for dynamic management of DTLA area streets and signals.

Widespread surveillance allowed for rapid response to crashes, incidents.

- Work schedule change
- Reduce truck traffic
- ATSAC

Moderately effective
Despite incentives, no significant change in work trip mode choice

- Limited implementation of one way streets
- Not enough spare capacity to effectively reroute trips
- Ramp closures generate delays and extra travel
Critical elements: Institutions and political will

• Broad consensus on problem to be solved and consequences of failure

• Broad consensus on feasible solutions
  • No large capital investments
  • Short term meant anything technically feasible was an option

• Commitment of leaders to act
  • Planning and decision-making by agency leaders
  • Streamlined decision process

• Consequences of failure a strong incentive
Lessons for 2028: Spectator strategies

- Event scheduling
  - Avoid overlap of major events, peak hour
- High quality transit service customized to spectators, visitors
  - Street priority
  - Express services
  - Minimize transfers
  - Customized information
Lessons for 2028: Non spectator strategies

• Technology will help to make system management more effective, but baseline congestion and lack of capacity will limit effectiveness

• Best strategies get trips off the road
  • Work at home a likely major strategy
  • Vacations, limits on non-essential meetings, virtual travel

• Olympics, Northridge earthquake, Carmaggedon show flexibility of travel behavior in short term
  • Once fears of gridlock abated, traffic patterns return to normal
2028 will have the challenge of a far more populous and congested Los Angeles.

2028 will have the opportunity of smart technology:
- Automation, information smooths spectator process
- Surveillance and real-time traffic management

Demand management strategies will play a critical role.

Public transit rail expansion may help, but only if service quality greatly improves.

Strong leadership, commitment, cooperation required.
Thank you

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Walker, A. and A. Lang (ND) *Lessons from the 1984 Olympics*  

https://mobility.tamu.edu/umr/congestion-data/