

Manajemen Lalulintas

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Suatu proses pengaturan pasokan (supply) dan kebutuhan (demand) sistem jalan raya yang ada untuk memenuhi suatu tujuan tertentu tanpa penambahan prasarana baru

Manajemen lalulintas biasanya diterapkan untuk memecahkan masalah lalulintas jangka pendek, atau yang bersifat sementara.

Manajemen Lalulintas

Secara garis besar Manajemen Lalulintas dibagi menjadi dua kelompok yaitu:

- Optimasi pasokan (Supply)
- Pengendalian kebutuhan (Demand)

OPTIMASI PASOKAN

Manajemen lalulintas yang termasuk dalam kelompok ini adalah:

- Pelarangan parkir di tepi jalan selama jam puncak
- Lokasi parkir khusus untuk parkir jangka pendek
- Jalan satu arah
- Penggunaan kapasitas sisa pada lajur arah berlawanan (reversible lane)

Pelarangan Parkir di Tepi Jalan

Parkir di tepi jalan mengurangi lebar efektif → mengurangi kapasitas

Lokasi Parkir Khusus

Prasarana parkir jangka pendek dan jangka panjang perlu dipisah

Jalan Satu Arah

Bila karena kondisi aktual guna lahan tidak dimungkinkan pelebaran jalan atau penambahan ruas jalan baru maka jalan satu arah dapat menjadi alternatif optimasi jaringan jalan.

One-way Streets

Advantages of One-way operation include:

- ⇒ Road capacity is increased, with the amount depending upon the conditions prevailing locally, e.g. the distribution of the previous two-way flow, the street width, and the turning movements at intersections,
- ⇒ Odd lanes which were not usable previously can be fully utilised,

One-way Streets

- ⇒ Slow-moving/stopped vehicles are more safely overtaken,
- ⇒ Turning movements at intersections are not delayed by opposing traffic,
- ⇒ Journey times and delays are reduced through more efficient traffic-signal timing and higher vehicle speeds,
- ⇒ The linking of traffic signals is facilitated,

One-way Streets [cont'd]

- ⇒ Public transport operation is more reliable,
- ⇒ Overall there is generally a reduction in vehicle-vehicle and pedestrian-vehicle accidents at intersections, and mid-block head-on accidents are eliminated,
- ⇒ Parking is facilitated (in terms of increased numbers of places and ease of parking).

One-way Streets

Disadvantages of One-way operation include:

- ⇒ Vehicles generally travel further to reach their destinations,
- ⇒ Public transport stops for the opposing direction of travel have to be relocated, and walking distances to/from stops increased,
- ⇒ The severity of non-head-on accidents is increased because of higher speeds,

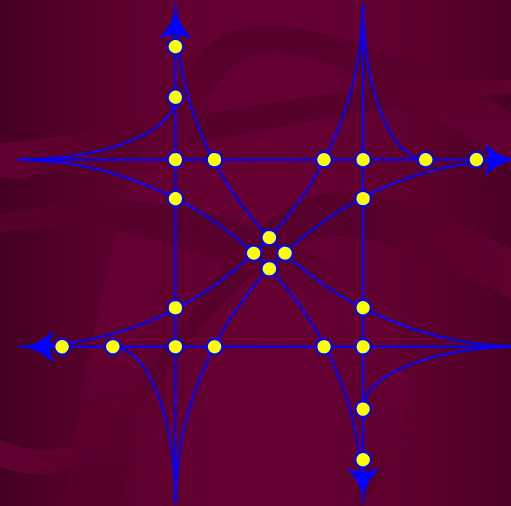
One-way Streets

- ⇒ Mid-block weaving accidents may increase,
- ⇒ Non-local motorists may become confused and additional signs, markings, channelisation and signal indications may be required to deal with unanticipated vehicle movements,

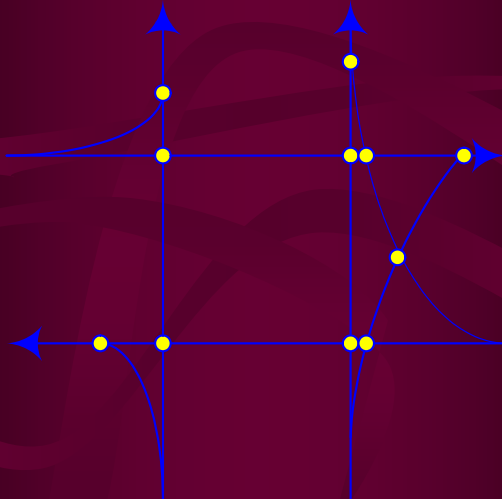
One-way Streets [cont'd]

⇒ Displaced traffic may have to be routed to a complementary street through residential areas, thereby causing increased speeds, loss of amenity and more accidents in these locales.

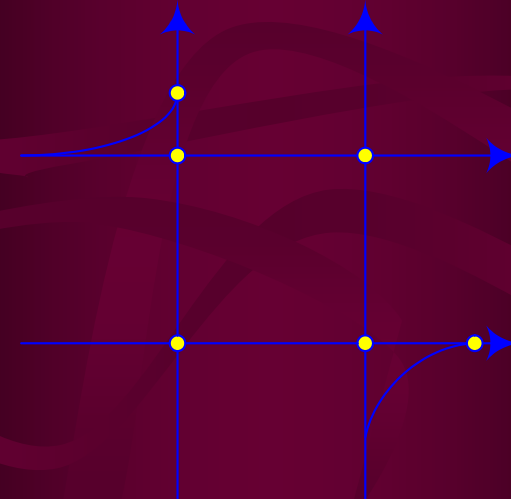
24 potential points of conflict
at a two two-way streets intersections



11 potential points of conflict
at an one one-way and one two-way
streets intersections



6 potential points of conflict
at a two one-way streets intersections



Reversible Lane

Jaringan jalan radial yang menghubungkan pusat kegiatan di tengah kota dengan perumahan di pinggir kota mengalami pola jam puncak arus lalu lintas yang khas.

Pada pagi hari kendaraan yang menuju pusat kota dominan. Sebaliknya pada sore hari kendaraan pada umumnya meninggalkan pusat kota untuk pulang.

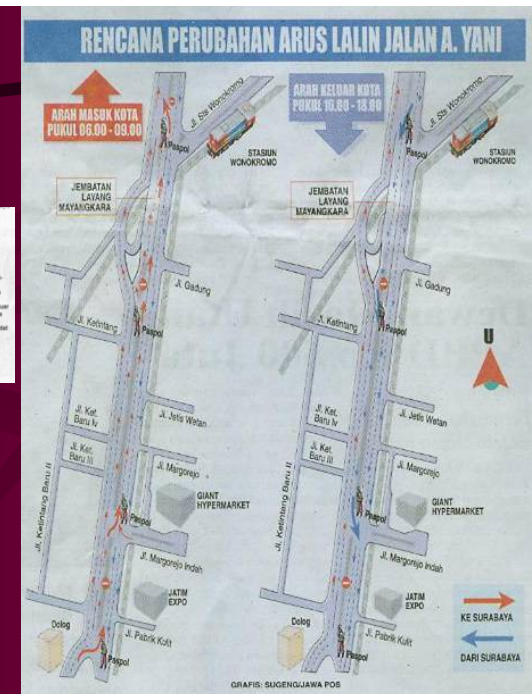
CONTRA FLOW



CONTRA FLOW



CONTRA FLOW



Tidal-Flow Operation

Advantages of Tidal-Flow operation include:

- ⇒ Extra capacity is provided on the same road at the time required and, unlike one-way streets, traffic in the minor direction does not have to move to complementary streets
- ⇒ Its usage is particularly applicable to **heavily trafficked bridges, tunnels and radial roads** in urban areas.

Tidal-Flow Operation

Disadvantages of Tidal-Flow operation include:

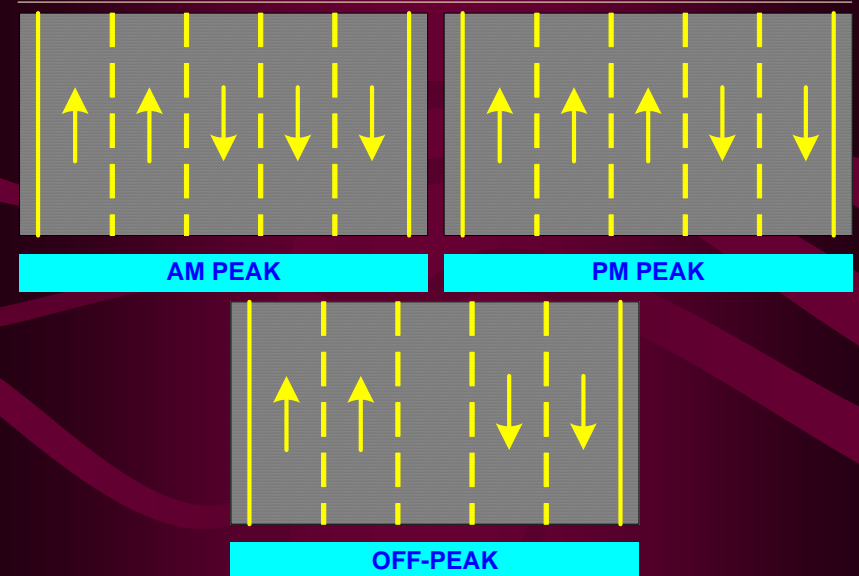
- ⇒ Their implementation can be expensive.
- ⇒ Poor implementation can result in increasing number of head-on accidents.
- ⇒ Central pedestrian refuge have to be removed.
- ⇒ No-parking restrictions are normally imposed.

Tidal-Flow Operation

Disadvantages of Tidal-Flow operation include:

- ⇒ Right turns from minor roads may have to be banned.
- ⇒ Bus stops and laybys may have to be removed if single lanes are used to carry the minor flow.
- ⇒ This type of operation normally cannot be applied to roads divided by central reservations.

Tidal-Flow Operation

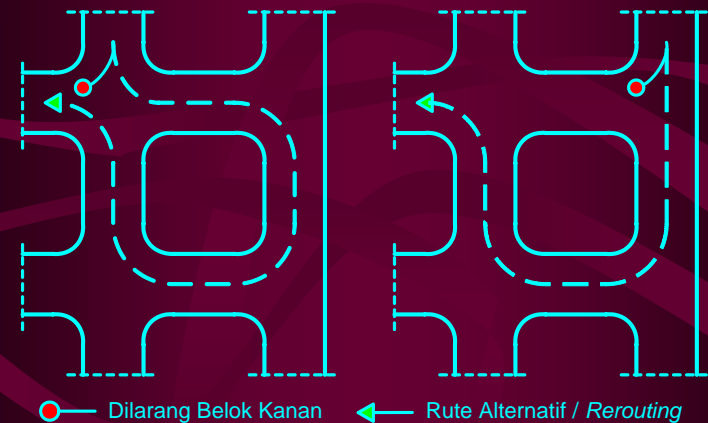


Contra Flow

Contraflow increases capacity by reversing the direction of roads

- Hurricane evacuation
- Terrorist attack evacuation
- Major sporting events
- Highway reconstruction
- Reversible lane

Restriction of Turning Movement



Traffic Signal Control

Advantages of Traffic Signal Control:

- 🚗 Road capacity is increased, with the amount depending upon the conditions prevailing locally, e.g. the distribution of the previous two-way flow, the street width, and the turning movements at intersections,
- 🚗 Odd lanes which were not usable previously can be fully utilized,
- 🚗 Slow-moving/stopped vehicles are more safely overtaken,
- 🚗 Turning movements at intersections are not delayed by opposing traffic,

Busway



Busway



Buslane



Buslane



Traffic Calming

"Traffic calming is a term that has emerged in Europe to describe a full range of **methods to slow cars, but not necessarily ban them**, as they move through commercial and residential neighborhoods.

The benefit for pedestrians and bicyclists is that **cars now drive at speeds that are safer and more compatible to walking and bicycling**. There is, in fact, a kind of equilibrium among all of the uses of a street, so **no one mode can dominate at the expense of another**."

Traffic Calming Objectives



The most fundamental traffic-calming goal is to **reduce the speed of vehicular movement**. With reduction of speed, the following objectives can be realized:

Traffic Calming Objectives

1. Improved "feel" of the street.

This objective calls for increased community involvement in and "ownership" of the street. If people feel more comfortable on the street, they are more likely to walk or bicycle there and to engage in other street-oriented activities with their neighbors. A key aspect of achieving this objective is reducing the perceived threat of danger from motor traffic.

Traffic Calming Objectives

2. Enhanced aesthetic values and a sense of nature.

Several traffic-calming techniques, such as street landscaping, pedestrian amenities, and reclamation of roadway areas can serve as community open space. Not only do these techniques make the neighborhood more attractive, but they also break up long, uninterrupted street vistas conducive to speeding and convey the message that "this is a pedestrian place."

Traffic Calming Objectives

3. Reduced crime.

It's harder to make a speedy getaway if a fleeing felon has to deal with speed humps, woonerfs, and traffic circles. It's harder to get away without being spotted if there are "eyes on the street" - if the street is a positive, community focus.

Traffic Calming Objectives

4. Equitable balance among transportation modes.

With reduced motorist speeds, safety is improved. Pedestrians and bicyclists have more time to detect and avoid motor vehicles. Traffic calming sends the message that "motor vehicles don't exclusively OWN the roadway" - that other modes have equal rights. Studies that evaluate traffic-calming improvements show increased levels of walking, bicycling, and transit use following installation.

Traffic Calming Objectives

5. Increased safety/decreased severity of injury in traffic crashes.

With reduced speeds comes a significant reduction in the number and severity of crashes involving motor vehicles. Traffic-calming facility evaluations uniformly show fewer crashes, fewer fatalities, and less severe injuries.

Traffic Calming Objectives

6. Improved air quality and noise levels.

Slower moving vehicles make less noise and, generally, emit fewer pollutants.

7. Decreased fuel consumption.

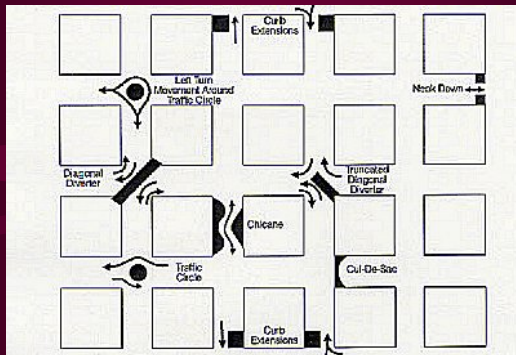
With more trips made by walking, bicycling, and transit, and with slower traffic speeds, fuel consumption reductions of 10 to 12 percent have been reported.

Traffic Calming Objectives

8. Continued accommodation of motor vehicle traffic.

An important objective is the continued accommodation of motor vehicle traffic. Although traffic calming shifts the balance among travel modes, this shift should not result in severely restricted traffic volumes or in shifting traffic problems from the traffic-calmed area to other streets.

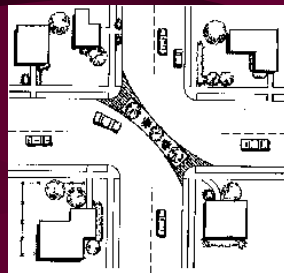
Integrated Traffic-Calming Plan



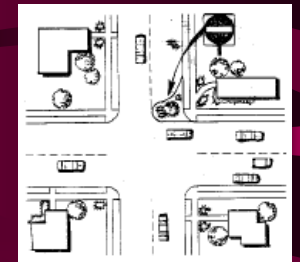
Chicane



Street Closures



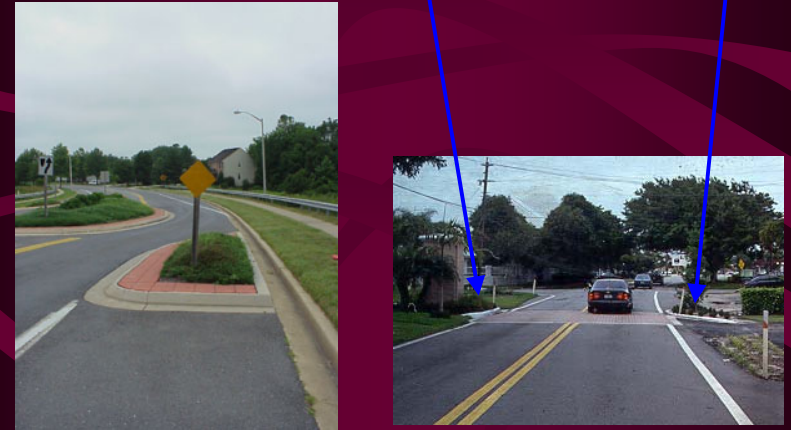
Street Closures



Traffic Calming



Chocker



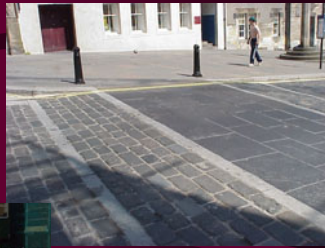
Speed Hump



Speed Hump



Speed Table



Woonerf

