REPORT
Regular Council Meeting
1993 February 01

CITY OF BURNABY

TRAFFIC AND TRANSPORTATION COMMITTEE
(TRANSPORTATION AND TRANSIT DIVISION)

HIS WORSHIP, THE MAYOR
AND COUNCILLORS

Re: 16th Avenue Traffic Infiltration

RECOMMENDATIONS:

1. THAT Council direct staff to consult with a group of residents of 16th Avenue to seek input on the approach involving the experimental installation of "Traffic Calming" measures as part of a Local Improvement Program for the 7700 and 7800 blocks of 16th Avenue, as well as any other option that may arise.

2. THAT Council direct staff, in consultation with local residents, to consider interim measures to alleviate the current traffic problems.

REPORT

The Traffic and Transportation Committee (Transportation and Transit Division), at its meeting held on 1993 January 21, adopted the attached staff report recommending traffic calming measures on Sixteenth Avenue between Sixth Street and Canada Way as an appropriate response to resident concerns regarding short cutting traffic.

Arising from the discussion of the report, the Committee requested that staff, in consultation with local residents, consider interim measures to alleviate the current traffic problems.

Respectfully submitted,

Members:

Mr. Ernest Neumann
Mr. Peter Miller
Mr. Len Werden

Councillor J. Young
Chairman

Councillor D. Evans
Member

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Councillor D. Lawson
Member

Councillor C. Redman
Member

TO: CHAIRMAN & MEMBERS
TRAFFIC & TRANSPORTATION COMMITTEE
(TRANSPORTATION AND TRANSIT DIVISION)

1993 JANUARY 5

OUR FILE: 16TH AVE

FROM: ACTING DIRECTOR PLANNING & BUILDING

SUBJECT: 16TH AVENUE TRAFFIC INFILTRATION

PURPOSE: To recommend "Traffic Calming" measures on Sixteenth Avenue between Sixth Street and Canada Way, to respond to concerns of residents regarding short-cutting traffic.

RECOMMENDATIONS:

1. **THAT** the Traffic and Transportation Committee direct staff to consult with a group of residents of 16th Avenue to seek input on the approach involving the experimental installation of "Traffic Calming" measures as part of a Local Improvement Program for the 7700 and 7800 blocks of 16th Avenue, as well as any other option that may arise.

REPORT

1.0 BACKGROUND

In a letter and petition dated 1992 July 29, Ms. Julianna Craig and other residents of the 7700 and 7800 blocks of 16th Avenue expressed concern regarding the increase in traffic volume on 16th Avenue since the installation of the full traffic signal at 6th Street and 16th Avenue. Residents also expressed concern regarding the speed of traffic, pedestrian safety, and the number of accidents at the intersection of 16th Avenue/Canada Way.

A 1992 December 9 the Committee received a report documenting traffic patterns and volumes on Sixteenth Avenue, as well as the accident history at the intersections of Sixteenth Avenue/Sixth Street and Sixteenth Avenue/Canada Way. The report showed that the traffic volume, especially the AM and PM Peak Hour traffic, had increased substantially since the conversion of the pedestrian signal at 6th Street to a full traffic signal in 1991 September.

A licence plate trace showed that non local traffic constituted 87% of all traffic on this section of 16th Avenue during the morning and afternoon peak hours. This non-local traffic is using 16th Avenue to by-pass traffic congestion at the intersection of Canada Way/Edmonds. The planned reconstruction of the intersection of Canada Way/Edmonds will provide sufficient capacity to handle the heavy west-bound right turn during the AM Peak, and the corresponding south-bound left turn during the PM Peak; however, since reconstruction of the Canada Way/Edmonds intersection will not commence before the spring/summer of 1994, an interim solution must be found.

Traffic speed through this area was also cited as a problem. Because commuters are seeking a time-saving route during the AM and PM Peak Hours, they display aggressive driving practices, including speeding. Therefore, "Traffic Calming" measures proposed for this section of 16th Avenue must address the problem of speed as well as volume of traffic.

Residents are also concerned about pedestrian safety due to the lack of proper sidewalks in this portion of their 16th Avenue. Ms. Craig's letter stated that residents want their street upgraded to provide curbs and sidewalks.

2.0 TRAFFIC CALMING MEASURES

At its meeting on 1992 January 4, the Traffic and Transportation Committee (Traffic Safety Division) received a report which discussed several "Traffic Calming" options. (A copy of the report is attached for the interest of Committee members.) In developing this report, staff consulted other municipalities including the City of New Westminster regarding their experience dealing with commuter traffic infiltration into their neighbourhoods. The City of New Westminster has considered various forms of "Traffic Calming", including road closures, traffic circles, and road humps/pavement undulations.

Based on this review of "Traffic Calming" measures, several options could be considered for this portion of 16th Avenue:

1. Closure of 16th Avenue west of 6th Street

   Closing 16th Avenue at 6th Street would cut the traffic volume significantly, but is considered a fairly drastic "solution" to the problem at hand. By closing 16th Avenue, the City would be restricting access to the neighbourhood, and by closing one street, perhaps diverting traffic to another residential street such as 15th or 17th Avenue. Also, closure of a residential street is not likely to be reversed in the future. As the residents of 16th Avenue have not proposed closure as an option, they appear to recognise the benefit of assured access and egress afforded by the traffic signal at 16th and 6th.

2. 4-Way Stop Signs at 16th Avenue/7th Street

   Four-way stop signs are designed primarily as traffic control devices, where warranted due to accident history or high traffic volume. They are not recommended for residential streets with low volumes where, because of their being unnecessary from a traffic volume point of view, they are likely to be ignored and misused over time.

3. Traffic Circle at the Intersection of 16th Avenue/7th Street

   In New Westminster and the Lakeview area in Burnaby, the installation of traffic circles has been successful in reducing traffic volumes and speed in the proximity of the circle. However, on 16th Avenue only one intersection is available for installation, and seems unlikely that one traffic circle on its own in this location would reduce through traffic.

4. Pavement Undulations

   Pavement undulations, or road humps, are similar in function to the speed bumps that the City currently installs in lanes, but they have a longer profile and are therefore less abrupt. Pavement undulations have been used in New Westminster, and they appear to have been successful in reducing the volume and speed of traffic on Sixth Avenue East and Alberta Street.

   Because of the nature and design of pavement undulations, they are best constructed on streets with curbs, otherwise vehicles swerve around the sides to avoid having to slow down to drive over the hump. Therefore, as 16th Avenue has no curbs, pavement undulations would need to be constructed as part of an overall Local Improvement Program for the street.

5. Pavement Constrictors

   Pavement Constrictors are not common in North America, but are used extensively in other countries. The constrictor reduces pavement width locally, and therefore causes approaching traffic to slow down. Because of this, pavement constrictors are especially useful at pedestrian crossings, including those at intersections.

After considering the above traffic calming measures, as well as their effectiveness in other locations, staff has concluded that the best option for dealing with the short-cutting traffic would be to incorporate pavement undulations and/or pavement constrictors into a Local Improvement Program. This would address the question of pedestrian safety on 16th Avenue, as well as reducing the speed and volume of traffic. In addition to providing a safe area for pedestrians, sidewalks and curbs on 16th Avenue would better define the traffic lanes. Provision of sidewalks would also result in better separation of passing vehicles from the houses, thus lessening the feeling of traffic encroachment.

3.0 IMPLEMENTATION OF "TRAFFIC CALMING" MEASURES

As with any other Local Improvement Program, the initiation must come from the residents of the street or streets in question. In order to comply with the standards, staff proposes to meet with a small group of residents to solicit their views on a program to provide sidewalks and pavement undulations and/or pavement constrictors, or a combination of Traffic Calming measures on this portion of 16th Avenue. If residents are in agreement with the proposal, the timing of these improvements should be given priority in the Local Improvement Program for 1993.

As with other LIPs, residents would be required to pay for 50% of the cost of the improvements; however, in this case the City would cover the cost of the pavement undulations or pavement constrictors, because of the experimental nature of their installation.

4.0 SUMMARY AND CONCLUSION

The main concerns of the residents of 16th Avenue are as follows:

* increase in traffic volume since the installation of the full signal at 6th Street,
* speed of traffic on 16th Avenue,
* safety of pedestrians on 16th Avenue due to lack of sidewalks,
* and, increased accidents at the Canada Way/16th Avenue intersection.

In the view of staff, the above concerns are most appropriately addressed by initiating a Local Improvement Program including the provision of pavement undulations and/or pavement constrictors as a Traffic Calming measure, as follows:

Speed and Traffic Volume:

Installation of pavement undulations/constrictors would reduce the speed of traffic on this section of 16th Avenue, therefore lessening the attraction of this route as a short-cut to Canada Way. The traffic volume on 16th Avenue could be expected to drop after traffic calming measures are completed.

Pedestrian Safety:

By providing sidewalks, pedestrians are shielded from the traffic.

Accidents:

With the provision of traffic calming measure on 16th Avenue, the volume of traffic is expected to be reduced resulting in a decrease in the number of accidents at Canada Way/16th Avenue.

Incorporating Traffic Calming measures into design of an overall Local Improvement Program, would do more than respond to resident concerns regarding traffic volumes and speeds, it would result in a more attractive street appearance on this block of 16th Avenue.

It is therefore recommended that the Traffic and Transportation Committee approve this approach as a basis for discussion with local residents, and report back to the Committee with the preferred solution.

D.G. Stenson, Acting Director
PLANNING & BUILDING

DAB/dab
Attach.

cc: Director Administrative Services
Director Engineering
Director Parks and Cultural Services
Director Finance

TRAFFIC CALMING: A DISCUSSION PAPER

1.0 BACKGROUND

Traffic Calming is a new name for the older objective of subjugating the automobile to enhance and maintain the livability of residential areas. Rooted in European cities, the concept of neighbourhood protection from extraneous traffic has been an integral component of Burnaby's adopted transportation policies since 1979. In the early 1980's, draft terms of reference for a participatory process for implementing residential neighbourhood protection were adopted in principal by the Transportation Committee but never applied. However, the slant of traffic calming, as considered in this report, differs from the previous neighbourhood protection initiatives. Those initiatives tended to focus on limiting through traffic. This report on traffic calming is more directed toward reducing speed to enhance safety; but hopefully reducing through traffic as by-product.

This background paper briefly examines the various devices available for traffic calming in the context of Burnaby, outlines issues of cost, and outlines the potential for funding programs.

2.0 TRAFFIC CALMING MEASURES

There is an array of measures that have been used for neighbourhood traffic calming. Some are illustrated in a copy of the attached leaflet published by the U.K. government. The devices used represent a range of intervention and their applicability individually or in concert would vary from case to case. There is no question that the more draconian measures, which force changes on intra-neighbourhood travel patterns such as road closures or diverters, would require a more intensive implementation process. There would have to be a thorough data gathering exercise to confirm existing perceptions of traffic and to estimate the ramification of the changes to be deployed. Similarly the public consultation process would have to be well managed in order to allow for both meaningful and equitable participation.

Our comments with regard to some of the less draconian neighbourhood traffic calming measures are below.

2.1 Traffic Circles

Traffic circles were recently installed on Lakefield Drive where they have been subject to mixed reviews by the residents. In retrospect, it would appear that this device is better suited to grid street intersections rather than T junctions as on Lakefield Drive. Both the cities of New Westminster and Vancouver have installed traffic circles in specific areas with some apparent success. Seattle uses traffic circles at individual intersections as part of its neighbourhood traffic control program. There the installation procedure is initiated by petition. Intersections are then point rated on the basis of accident history, traffic demand, and traffic speed. Low rated intersections are not considered eligible for the limited fund pool. Typically, the process takes 6-18 months. Seattle City Engineering Department views the traffic circle program an operational success, at least in part because it has reduced the demand for unwarranted 4-way stop sign control.

One of our major concerns is that traffic circles are not well understood by North American motorists and the courtesy corner ambiguity which results in right angle collisions is not necessarily alleviated. This could be mitigated by forcing traffic entering the circle to yield to traffic in the roundabout as occurs in Europe. This would result in a free flow intersection - once motorists learned - but this objective is counter to the North American rationale for installing them.

2.2 Speed Limits and Other Regulations

It would appear that the City could designate a lower speed limit on some or all residential streets. However, we do not believe that enforcement of such a measure is practicable. Indeed part of the current problem in neighbourhoods is that existing speed limits are not obeyed. That is why European jurisdictions which have implemented lower speeds in neighbourhoods rely on some of the other devices discussed here. Other regulatory signs such as turn prohibitions should ideally include some element of self regulation.

Stop sign control of all intersections in a residential area would seem to have considerable popular appeal. While this is not general practice in B.C., it is the norm in other urban jurisdictions. While we are concerned with deviating from local practice, we believe that traffic safety would not be adversely affected.

We continue to have concern with the misapplication of 4-way stops which are generally regarded as a notch below a traffic signal as a control device. The proliferation of 4-way stops at low volume intersections where they are not warranted by any accident history will undoubtedly, over time, erode the credibility and safety of this control.

2.3 Chicanes, Constrictors, Etc.

Chicanes, constrictors, etc. are uncommon in North American applications but are extensively used elsewhere. In particular, road constrictions at pedestrian crosswalks, including those at intersections, would appear to be a useful device both for protecting pedestrians and slowing down approaching vehicles. A significant constraint to retrofitting these type of measures is the need to accommodate existing drainage a particular problem in our climate.

2.4 Pavement Undulations

Pavement undulations or road humps have a longer profile than the shorter more abrupt speed bumps that the City currently installs in our lanes as a residential initiative. Road humps are popular in Australia and Europe but have not found a significant following in North American traffic engineering practice. We note that there is a traffic calming initiative using road humps in New Westminster. Our understanding is that the early indications are that the New Westminster initiative has been a success. We patterned our North Fraser Way pavement undulations after the design used in New Westminster except that one of the five bumps was installed at three inches high rather than four. In retrospect, we believe that the lower hump profile would have sufficed in fulfilling the objective of eliminating drag racing. Even the lower profile hump however has a significant impact on vehicle speeds, especially trucks. This is a particular concern for emergency services.

2.5 Pavement Markings

Pavement markings are generally not used on residential streets but appear to offer some opportunity for slowing down traffic on local collector streets where the initiatives discussed above are generally not recommended. The Burnaby local collector standards is 36 ft (11m) curb to curb normally with a painted solid centre line. This width allows for one moving lane of traffic per direction with parking on either side. With no on-street parking there is no side "friction" and moving vehicles have an exceedingly generous through lane. We have recently installed parking stall markings on Parker at Holdom to better define the moving lane but there is the possibility of edge lining the moving lane to create a similar effect. Such marking may also improve cyclist safety on collector streets.

3.0 COSTS

The traffic calming measures discussed in this report come at an expense; both in terms of the initial cost of installation and in subsequent years of maintenance. The former is a capital cost and the latter impacts the annual operating budget. Any program to implement traffic calming measures should address both costs, as typically, operating cost implications are often overlooked after capital costs have been met. If the City is to embark on a comprehensive traffic calming program the costs of doing so must be explicitly estimated and budgeted for.

3.1 Capital Costs

The capital costs of traffic calming measures can vary significantly. Obviously the cost of an individual feature such as a road closure and cul-de-sac is conditioned by the choice of materials, landscaping and so on, but the requirement to relocate or modify existing infrastructure or acquire right-of-way can significantly escalate the cost of any design. For example, our experience with roundabout installations on Lakefield Drive indicates a unit cost of $8,500 while road humps would typically cost slightly over $1,000 each. Harder to estimate are "custom" installations such as road closures, constrictions, chicanes, etc. We note that the Maywood/Patterson cul-de-sac, which is not an atypical installation, cost just under $30,000.

3.2 Administration

Comprehensive neighbourhood protection programs are rich in public participation, which if it is to be done well requires a significant staff resource commitment. Less visibly staff resources are required to collect and analyze data, design improvements and administer implementation.

For less complex traffic calming schemes where the focus is on reducing traffic speeds and the options are well defined the public consultation process can be more truncated. For example, a mail back questionnaire could well be sufficient to establish whether there is a consensus.

However, even a mail back questionnaire requires administrative resources. The resource consumption would increase, potentially significantly if the administrative procedure required is cumbersome. This is inherent in any formal Local Improvement Program (LIP) as well as any program that requires extensive data acquisition to establish "warrants" or implementation priority.

3.3 Operating Costs

Operating costs for individual schemes would appear to be marginal but on aggregate will generate an increasing demand on the budget. Hard items such as curb work should require little maintenance but items such as landscaping and road marking paint will require annual attention. Signs and thermoplastic road markings in residential areas can be expected to last 5 to 10 years before requiring renewal unless damaged in the interim. However, the current rate of accumulation of "stock" is already stressing the operational and administrative resources of the City.

3.4 Externalities

Traffic calming and neighbourhood protection schemes will also have a cumulative impact on emergency services response rates particularly the Fire Department and ambulance service and will undoubtedly hasten the acceleration of road congestion and pollution. Snow plowing would be impracticable with traffic calming devices such as pavement undulations, traffic circles, etc. However, this would not necessarily be a hardship as, in most instances, the local residential streets where the measures would be implemented are low in priority for plowing.

Presumably these external costs will be offset by the tangible and intangible benefits that accrue to the residents. There is also a question of liability exposure but we note that traffic calming measures such as the ones discussed have been implemented elsewhere. Obviously the design and signing must be appropriate.

4.0 FUNDING

Unless the traffic calming program supplants an existing service, it will be an additional draw on the tax dollar. The tax impact could be somewhat mitigated if alternate funding were employed for at least some of the "front-end" costs. A logical source of funding is the benefitting group (ie. the neighbourhood residents).

4.1 Willingness to Pay

Arguably there are two related advantages to this "user pay" concept. First, if neighbourhood traffic improvements were offered as a free good, then potentially every neighbourhood would want to be included, and the list of waiting neighbourhoods would be a lengthy one. The City would inevitably have to "ration" schemes and this would require establishment of a program of data acquisition and assessment to ensure that the most "needed" schemes were done

first. Second, the impact of traffic is as much perceptual as it is actual. The willingness to pay criterion in essence recognizes this better than measured objective criteria.

However, it can also be argued that this approach is regressive to the extent that well to do neighbourhoods can more readily fund improvements whereas the older neighbourhoods where residents are least able to pay have potentially the greatest problems.

4.2 LIP

Spreading the costs of improvements over a wider area such as a neighbourhood, rather one street would tend to minimize the monetary impact of traffic calming measures.

Part 16 of the Municipal Act details how residents can participate in local improvements. The City currently and periodically has local improvement programs for completing streets (including curb, gutters, sidewalks, street lights, etc.) whereby adjacent benefitting owners pay a portion of the costs. The Act also permits Council to carry out local improvements for specified areas and charge back the entire cost of the work to the owners of real property within the area. While the process for carrying out an LIP is administratively cumbersome it requires proper resident input and is equitable in cost distribution. Because LIP is a cumbersome process, there may well be some scale advantage to using it to concurrently fund other neighbourhood initiatives and amenities, eg. park/trail links, playgrounds, tree planting, etc. in addition to traffic measures.

4.3 Self Assessment

With self assessed resident initiatives such as the existing rear lane speed bump program, the funding is collected by the beneficiaries themselves. This obviates the need for any extensive bureaucratic intervention by City staff and allows the residents to determine an internally appropriate if not equitable distribution of funding.

5.0 DISCUSSION/CONCLUSIONS

This review of traffic calming measures has stressed the matter costs and program funding because of the current economic climate. The requirement for fiscal restraint leads to a number of conclusions.

5.1 The comprehensive neighbourhood plan approach to traffic is most appropriate to the major restructuring of neighbourhood travel patterns.

5.2 However the comprehensive neighbourhood plan approach requires extensive staff resources both for data acquisition and public participation.

5.3 The comprehensive neighbourhood plan approach may be suited to participative control and funding via Area Specific LIP.

5.4 The use of traffic circles should be reserved for conventional residential intersections, not used in relative isolation, but rather on a comprehensive basis.

5.5 Replacement of courtesy corners by stop control intersections in residential areas appears to be a cost effective and popular measure, the merits and implications of which should be further evaluated.

5.6 Pavement undulations and road humps are clearly effective in curtailing speeding on **local residential streets** and there may well be an opportunity to fund them on a local initiative basis in a program similar to that used for rear lane speed bumps.

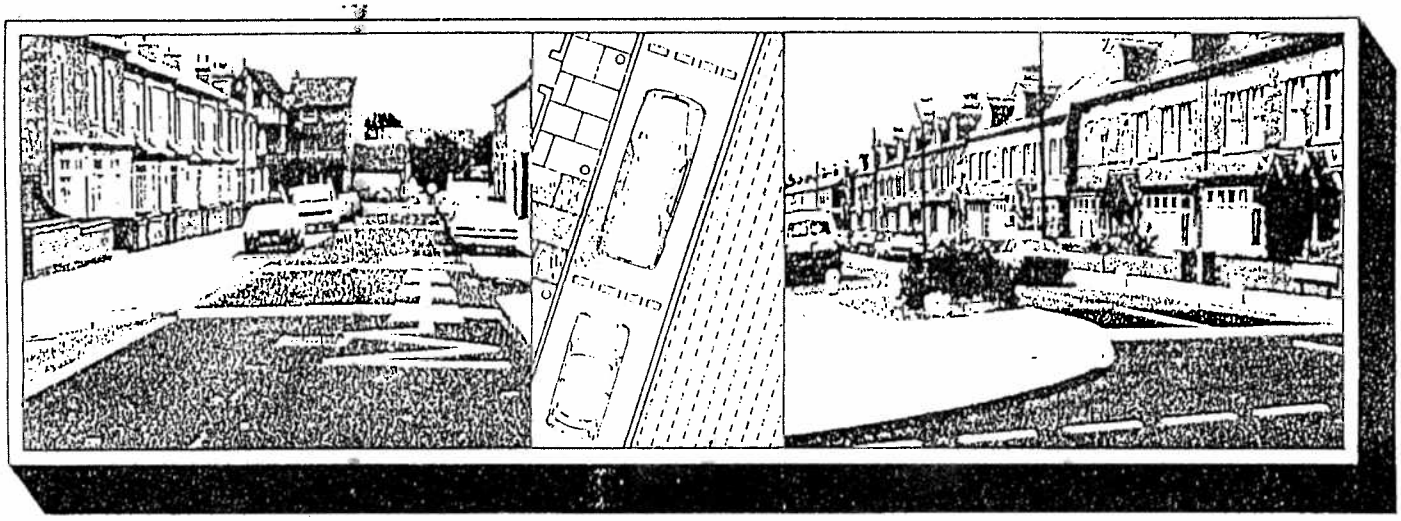
5.7 There is the opportunity for other measures such as roadway constrictions to be evaluated on a case by case basis to determine their utility in future comprehensive schemes.

5.8 A special concern is speeding on collector streets where more draconian traffic calming measures are **not recommended** in order to maintain accessibility. However, there is an opportunity for using road markings to better channel traffic while providing greater protection to cyclists.

Department of Transport
TRAFFIC ADVISORY UNIT LEAFLET 1/87

MEASURES TO CONTROL TRAFFIC FOR THE BENEFIT OF RESIDENTS, PEDESTRIANS AND CYCLISTS

Object of Leaflet – A wide range of measures is available to local authorities for controlling traffic movement in local streets and giving safer and more pleasant conditions for residents. This leaflet illustrates some techniques that can be used. There will be others. The Department proposes to publish further leaflets in this series where it would be helpful. The object is to draw attention to readily available and effective low cost ways of handling traffic safety in residential areas and giving greater emphasis to the needs of residents.

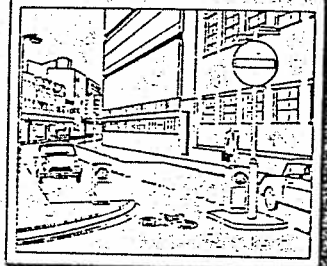


Scope – Most of the published advice on the design of residential areas has been concentrated on new developments. Similar principles can be applied to existing areas but the scope for implementation is usually much less. This leaflet concentrates on a range of traffic control measures that are available to local authorities for implementation either alongside major refurbishment of housing stock or independently. In the right circumstances they can offer safety gains to vulnerable road users and environmental gains to residents. They can be particularly useful in developing safe routes to school and shops and in reducing traffic volume and speeds in sensitive areas. Care should be taken to safeguard the interests of local businesses so far as is possible. Complementary measures will generally be required on through routes to handle traffic displaced from residential roads.

A Safer Environment – The Department proposes to sustain and apply the messages of European Road Safety Year 1986 by highlighting techniques for traffic handling that have been identified as useful and effective in this country and abroad. European Year of the Environment provides an added focus for measures which can also contribute to the quality of life in urban areas.

"PLUG" NO-ENTRY (WITH CYCLE SLIP)

One-way streets can be used to break up rat runs and thus discourage through traffic. Their disadvantages include a tendency to increase traffic speeds (unless other measures are taken to counter this) and the imposition of disproportionate penalties on cyclists. A technique which can be used to overcome this problem is the "plug" no-entry with a cycle slip. The road remains two-way but entry at the plugged end is permitted only to cyclists.



ROAD HUMPS

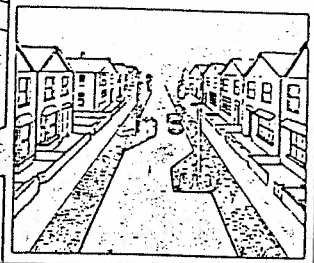
The new regulations (published in 1986) should make it easier to find suitable sites and use this technique more widely.

RUMBLE STRIPS

A line of granite setts at intervals, though not speed control devices in themselves, can act as a warning or reminder to drivers that they are in a residential street and should limit their speed.

CHICANES

Where full closure or speed humps are undesirable or impracticable, chicanes may offer a means of reducing traffic speeds or capacity. Many different layouts are possible, and the effect can even be produced by parking provision staggered on alternate sides of the road.



THE PRESENTATION IN THIS LEAFLET IS SCHEMATIC AND IS NOT INTENDED TO MEAN THAT THE FULL RANGE OF MEASURES CAN NECESSARILY BE IMPLEMENTED IN SUCH CLOSE PROXIMITY.

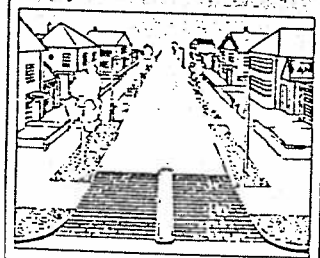
SCHOOL

FOOTWAY WIDENING

This technique can be helpful in discouraging parking close to junctions, and make it easier and safer for pedestrians to cross.

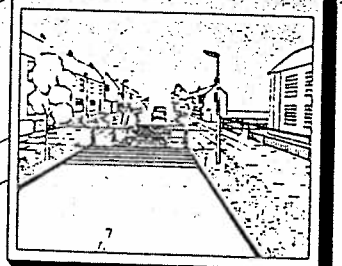
ENTRY TREATMENT

This method, using granite setts or other textured surface treatments, may have fewer legal problems than treatment across junctions, but may also be less effective unless radii are made very tight. The aim is to provide an entry or "gateway" image, reducing speed by both physical and psychological means.



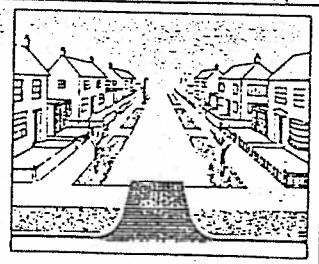
TRAFFIC THROTTLE

Could be used to control traffic capacity and speed, and focus pedestrian crossing movements.



TREATMENT ACROSS JUNCTIONS

This can reduce vehicle entry speeds and improve pedestrian safety, but more experimental schemes are needed to investigate different methods andties for possible confusion over pedestrian and vehicular priority.



WIDTH RESTRICTIONS

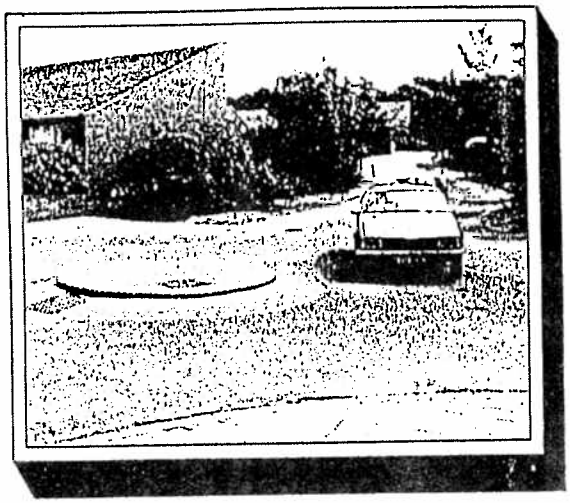
These can be used to remove large vehicles. It should be remembered however that they can also be a barrier to fire tenders and emergency vehicles. Some designs permit use by such vehicles by means of lockable posts or ramped islands.

ENVIRONMENTAL ROAD CLOSURES

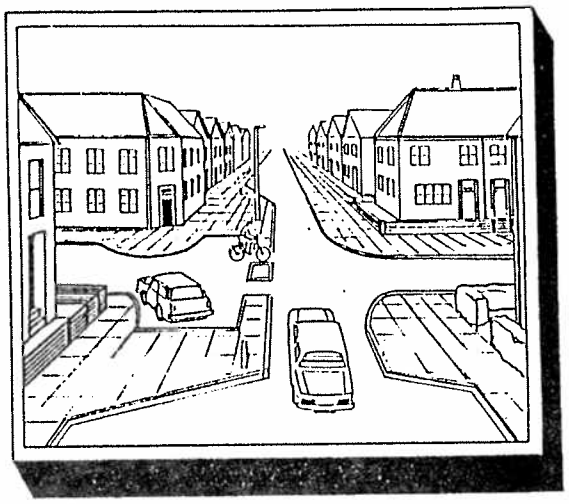
Environmental road closures should always include cycle gaps, and wherever possible these should be designed to reduce the risk of obstruction by parked vehicles. Road closures should be used with care – they can cause turning and reversing problems, and like any measure which forces change in traffic patterns can sometimes re-distribute traffic to an unacceptable degree. It should also be borne in mind that thoughtless parking can block passable barriers intended for emergency vehicles.

FURTHER POSSIBLE TECHNIQUES

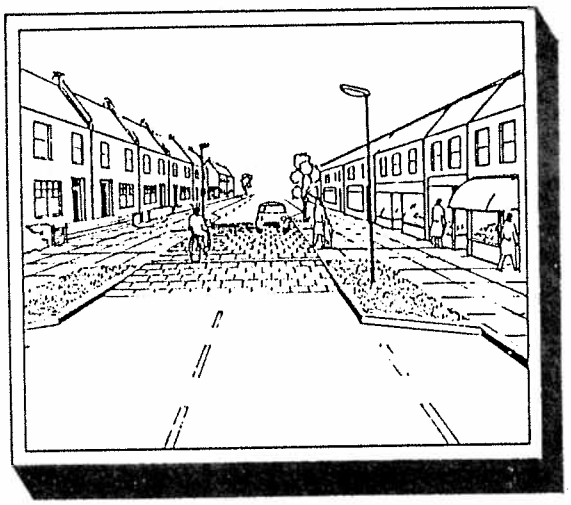
SPEED CONTROL ISLAND



ROAD CLOSURE/TURNING AREA



WIDE AREA CROSSING



STAGGERED JUNCTION TREATMENT

Photo: Marshalls Mono

Consultation Process – Traffic measures need to take account of their impact on local access, especially to commercial premises, on parking, and on through traffic movements. The views of the police and emergency services must be given full weight. Full consultation is essential and in cases where orders are required under the Road Traffic Regulation Act 1984 there will be statutory consultation processes that local authorities are required to undertake.

Feedback – Comments on the techniques illustrated in this leaflet, and information on other techniques are invited from local authorities, interested bodies and individuals. Contributions should be sent to:

The Traffic Advisory Unit
Room C10/19A
Department of Transport
2 Marsham Street
London SW1P 3EB

There is no final date for contributions, but 31 May 1987 would assist in planning the next stages of work in this area.