clude elements, necessary for translation of new programme and functional needs into reality:
- new methods of evaluation, based on essential and quickly accessible information (phenomenological knowledge),
- complex approach to planning and decision making,
- adaptability of renewal plans to lives realities (moving from static plans which define things once for all times, into plans which enable constant changes).

The demand for an integral approach to design of physical structures leads to a multi-dimensional production of renewal plans. By separating the levels between different solutions in connection to structure and its typology, but with simultaneous mixing, we can facilitate greater flexibility of plans and diminish rigidity of contemporary planning instruments.

We believe in a normative project approach for solving spatial problems, which includes classical forms of determining land-use, as well as necessary freedom of interpretation, demanded by time and constant changes in life.

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Notes

1 The ethical criteria of planning doesn't mean general social equity, but fairly clearly established boundaries, that prevent direct intervention into the sphere of privacy and driving people into changes, which they want themselves (Gantar, P.: Planning Theories, lecture 1996).

2 'Rural' as a particular shape of spatial and cultural organisation and psychological consciousness will exist until work processes, tied to soil and its biological production exist and until these activities function in a tight bond between humans and their natural environment. 'Rural' will also exist in new conditions in different shapes.

3 Today, when we are aware of such problems, two strategies of management are possible. The first, technologically-urbanist strategy, is probably the only acceptable one under present conditions; it implies constant technological innovations in spatial management, the final goal being total control of events. The second, post-modernist strategy, is based on the assumption, that it is impossible and irrational to control everything (Kos, 1993).

4 Regulatory 'totalitarity' means, precise definition of methods and contents of spatial interventions. Technical, organisational, artistic, hygienic and other measures of physical planning often indirectly determine methods and contents of other features of everyday life. It appears that, in comparison to other fields and in comparison with other regulatory mechanisms, physical planning in the widest sense, tries to fill in the void between planable and phenomenal. The paradox of physical planning is therefore, that in its 'theoretical' basis it is 'totalitarian', although it is evident, that practice doesn't confirm the principle (Kos, 1993).

5 Why aren't building plots and functional areas of particular complex units in development areas defined in the cartographic part? Instead we need a kadastral-property note for the whole kadastral area. And still, there is no recognition of properties which can be developed and which cannot. Even if a plot is in the development area, it only has the 'chance' to be changed into a building plot, for which re-categorisation and change of land-use has to be carried out.

6 Antinomy (gr. Antinomia from anti-nomos (law)), the opposite, contrary between two facts, terms, statements; contradiction of two statements, judgments that are mutually exclusive, but where both can be rationally and logically proved (filos. Contradiction of logical with itself).
Association (lat. Associatio from associare: to tie) connection, tie between particular terms, images, so that one provokes the other.

7 Gabrijelčič, P. and Fikfak, A., Globočnik, T., Leva, B., Zavodnik, A.: Managing the cultural landscape area of Novo mesto: Scientific studies and Spatial planning conditions for the municipality of Novo mesto, Faculty of Architecture, 1988 and 1994.

Figure 1: *The method and elements of designing settlements, subject to influences of changing planning theories (defining rationality)*

Figure 2: *The procedure of designing renewal plans for non-urban settlements*

Figure 3: *The influence of changing theoretical and historical basis on the method and elements of the method (individual steps) in preparing renewal plans for management of non-urban settlements, unto implementation*

Figure 4: *An example of structural simulation in Trebnja Gorica*

Figure 5: *The effects of a project oriented system and particular instruments on the preparation and implementation of a renewal plan for non-urban settlements*

Figure 6: *The settlement Dolž*

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Aljaž PLEVNIK

The Importance of Integrating Urban and Traffic Planning

1. Introduction

In the last decades traffic has been one of the greatest problems of many European towns. With motorisation in full swing, traffic has transformed from stimulator of urban development into an obstacle of future development and mobility. The volume of traffic often exceeds the absorption capability of a town, it infringes on the quality of life and natural environment. Suburbanisation processes strengthen dependency on cars, thus the problem grows. The rate of motorisation (car ownership) is growing while, at the same time, public transport is losing in significance (OECD, ECMT, 1995)

Because of the rapid growth in road traffic, traffic management is limited to satisfying needs of individual car users instead of alternative traffic modes (railroad, cycling, pedestrians), all of which have distinct social and ecological advantages over car use. Disregard for different traffic modes

also lessens possibilities of choice. Such urban traffic management policies, which are based on satisfying demand (rather building traffic infrastructure), sooner or later cause quite opposite effects and the problems grow.

Contemporary approaches, such as ecological or sustainable traffic management are more complex and are focused on solving the causes of problems or controlling traffic demand. Importance in controlling traffic demand is given to adequate spatial development of towns and their hinterland, a consequence of the recognised ties between urban structures and traffic demand. Traffic demand is tightly knit with the location and intensity of land-use. Land-use can be managed with urban planning measures, therefore it can influence the volume, directions and length of voyages. Management of urban traffic has to be dealt with as a part of general urban planning and as one of the basic instruments of directing development of urban structures.

2. The Rationale of the Integrated Approach

Concerning traffic management in European towns, in the last decades terms such as: 'comprehensive', 'integrated', 'balanced' or 'sustainable' policies of urban traffic management, have been emerging. As put by May, on the strategic level these terms can be understood as synonyms (May, 1993:1). They represent a comprehensive approach to solving urban traffic, an answer to mostly unsuccessful partial attempts that only made the situation worse. They are the result of a turn in cognition and evaluation, a characteristic of urban traffic management in the last decade. In the article I used the term – integrated policy.

In practice the term integrated policies of urban traffic management has different contents. For example, the British traffic authority pleads for four main methods of integrating urban traffic policies, the last one being best suited for our purposes (May, 1993:2):
- integration of decision making institutions
- integration of measures for different traffic modes
- integration of measures for financing and managing infrastructure
- integration of measures in traffic and physical planning policies

The integrated approach in traffic management places importance to management of traffic demand, which is tightly connected to urban structure. Despite the fact, that the connection between urban structure and traffic demand has been known, analysed and modeled for a long time, use of the connection as the starting point in planning practices has become more intense only in the last decade. Literature on the subject is not varied. Knowledge on the connections is based on empirical research and models. According to Owens, their number is limited because of numerous methodological problems (Owens, 1996:187). So far, researchers haven't provided definite answers on the ideal spatial pattern from the view point of traffic efficiency. Although there is much inclarity and disagreement, in practice the amount of accumulated knowledge nevertheless allows concordance on many principles.

The researched connections are rather complex. Traffic systems directly occupy urban space and significantly influence the urban structure. Besides the direct connections there are a number of indirect effects as well, with long-term influence. Clarifying these enables the understanding the importance of integrating physical and traffic planning.

The Influences of Traffic on the Urban Structure

The traffic system is more than a physical phenomenon. Wingo and Perloff have pointed out the importance of management as the basic instrument of designing urban structures. Even more, they claim, that the choice of traffic system is a basic development decision adopted by any urban region (in Burton, 1985:57). The immediate consequence of a traffic system are the source, goal and voyage time, choice of traffic mode and choice of voyage mode. In the long run, consequences are location of activities, which adapt to different traffic possibilities and travel costs. Effects on urban structures coincide with travel costs, measured by time and money. Travel costs influence the mobility of the individual, accessibility of sites and potentially on the development of an area. The importance of traffic systems in forming patterns of land-use can be justified with historical sources – for example, the use of motor vehicles on roads in conjunction with growth in quality of life and diminishing traffic costs, has in the last century been the cause of a dispersed settlements pattern.

The processes are slow and have long-term effects, so it is difficult to measure or forecast the influences of traffic on land-use, although the importance of these effects is common knowledge, proven through research. In the research of the European conference of ministers of traffic their results were summarised and the conclusions were, that the development of traffic infrastructure has substantial influence on changes in land-use and increases traffic demand on specific sites. For example, a new road can cause rearrangements of old traffic patterns and generate new ones. It also affects individuals and activities to adapt to new patterns of accessibility (ECMT, 1996:3). Urban ring-roads usually provoke growth of new buildings on neighbouring plots, which have become easily accessible. They can cause decentralisation of functions and, in general, affect land-use in the urban periphery and also indirectly in urban centres. Spatial development of North American towns can be used as a projection of possible trends in European towns. According to Harris, in recent times, development has been concentrating on areas along urban ring-roads, which enable relatively good accessibility to extensive vacant areas and the inter-connectedness of rapidly growing suburban settlements (Harris, 1997).

Knowledge on effects of traffic on the design of urban structures have stimulated ideas about directing changes in urban structure by changing their traffic systems. Owens concludes, that if growth in use of individual motor vehicles has significantly affected urban structure, we can assume that a similar effect would be caused by enforcing measures for limiting such traffic (Owens, 1996:188). Limiting use of motor cars and stimulating use of alternative traffic modes (public transport, bicycle, walking) in the long run, we can influence shifts in individual movement and activity placement. The role of city centres can be reestablished, as well as the role of urban sub-centres and other sites, which could be serviced by public transport. Sites which can be reached only by using cars would be less attractive. However, we have to

be aware of the complexity of such measures. Partial measures can have the opposite effect, for example, limiting parking in town centres which is not followed by parallel measures on other traffic systems can increase demand for sites on the urban edge, easily accessed by car.

Knowledge about influences of traffic on the urban structure is older and more respected than vice-versa, i.e. effects of urban land-use on traffic. The latter is gaining in importance and is presented in the following chapter.

Influences of Land-use on Traffic

Recognition of the fact, that different land-uses generate different and changing traffic flows (first established in the USA in 1953), led to ideas about potentials in physical planning to diminish the need for traveling. Despite difficulties in assessing effects, estimates were done so that factors of traffic demand would vary between 2 and 3 between best and least efficient patterns of land-use (Owens, 1996:189). These estimates are based on research carried out in the USA where urban densities are low. In European towns, owing to higher urban densities, these differences would probably be smaller. Nevertheless, measures in urban policies, combined with other measures are an important potential for diminishing traffic demand.

Since land-use is relatively stable and its changes long-term, possibilities for changing traffic flows with its use are long-term. In the research on changing land-use in Great Britain the estimate is, that industrial areas grow by 1 % per year, areas for offices by 2-3 % per year, commercial and retail areas by 1-2% per year (some sectors, such us foodstuffs, even by 8% per year), while housing areas grow by 1-1,5 % per year, despite stagnation in population growth; the changing structure of households causes consistent pressure on housing development (UK DOE/DOT, 1993:27).

Research of relations between land-use and traffic demand however has to respect the level of discourse. Concentration of activities in a smaller settlement can cause the decentralisation of activities in the wider, regional context. At the same time, development of a large, regional shopping mall on a towns edge, will cause decentralisation of retail activities within the town itself.

Most research relates traffic demand to selected elements of a town structure (urban density, land-use, location of traffic generating activities), dealt with in the next chapter.

Urban Densities

In literature concerning the importance of raising urban densities in diminishing the necessity to travel, there are certain discrepancies. One of the main reasons is the problem of evaluation of the meaning of densities independently, without other factors of traffic demand, such as: household income, car ownership, quality and vicinity of public transport. When dealing with all the factors, research hardly ever discerned the relation between urban densities and voyages.

Although there are discrepancies, many researchers have proved that higher urban densities are in close connection with diminished traffic demand. American research shows, that consumption of fuel is much larger in housing areas, where density drops below 30 inhabitants per hectare. National traffic research in Great Britain shows rapid increase of traffic demand when densities drop below 15 inhabitants per hectare, and notable drop in demand in areas with densities above 50 inhabitants per hectare (UK DOE/DOT, 1993:33). Results of research in metropolitan regions worldwide are similar and prove, that residents of suburban low density settlements travel more and more often than residents of town centres (Newman, Kenworthy, 1989). The Norwegian experience is that a drop in density from 33 inhabitants to 17 per hectare (meaning growth of urban surfaces per inhabitant from 300 to 600 m2), increases energy consumption in traffic by 25 %, after isolating all other variables (Naess,1996:92).

The underlying hypothesis is, that increasing urban densities causes decrease in distances between activities, leading to diminishing traffic demand and to shorter and less frequent voyages, because of possibilities of satisfying different needs at the same time. The reality though is quite different, with reasons following behavioural patterns of individuals, whose basic motives for choosing their residence, work place or other requirements, are not diminishing voyages. Even frequency of voyages often differs between towns of different densities.

The second potential for higher urban densities emerges from the character of public transport. Adequate densities and sensible concentration of activities allow effective operation and often survival of public transport. Several authors nevertheless state that the importance of physical measures is secondary to improving effectiveness of public transport systems. The answer to this dilemma is possible ineffectiveness of partial planning measures. Even the most efficient public transport system cannot survive without a necessary gravitational hinterland of potential users. For this reason alone higher densities can increase the public transport potential. In Trondheim (Norway) for example, research showed that the economics of public transport relies heavily on urban densities in areas serviced by public transport. High densities along the routes can facilitate greater frequency while development of new urban areas, can justify establishment of new routes (Naess, 1996:60). Nodes (crossroads) in a public transport system are of particular importance, because they enable better accessibility than individual routes. That is why urban design guidelines usually locate work places and other traffic generating activities in the vicinity of these nodes.

Shortening distances between sources and goals of urban voyages allow increase of voyages achieved by bicycle or on foot. German data shows that in the hierarchy of traffic modes, walking dominates on distances unto 1,5 km, cycling on distances between 1,5-3,3 km, and cars on longer distances. As with other measures, increasing densities alone, will not increase the share of cyclists and pedestrians. It is necessary to provide other conditions as well, especially security and an effective and friendly infrastructure for these users.

Diminishing physical separation of activities and increasing densities is therefore a necessary, but not comprehensive condition for diminishing traffic demand and changing the structure of traffic. By parallely conducting most of the measures of a comprehensive policy, higher densities would facilitate suitable accessibility and choice, with less and shorter voyages, as well as a wider pallete of traffic modes.

Location of Activities

Physical separation of activities can be diminished, not only by increasing densities, but also by adequate placement of activities. Joining or mixing uses enables (other than most advantages of higher densities) conducting multi-functional voyages thus diminishing the number of voyages. However, even in this case, the relation is not one-dimensional. Habits of individuals are complex, therefore mixed use alone doesn't shorten voyages. An important role is played by mobility. If the level of mobility is high (in the sense of accessibility and car use), distance between activities has little influence on traffic demand. There are many urban settlements which are relatively autonomous and self-sufficient, but are congested with daily migrants and local voyages.

As with densities, the level of discourse is also important in the location of activities. Different activities can be joined and intertwined on a neighbourhood, municipal or regional level. Decisions on different levels are interrelated, thus the success of measures in this field is conditioned by vertical interconnectedness of planning decisions.

The basic dilemma concerning location of activities is between centralised or decentralised distribution of inhabitants and activities. Earlier researchers tried to prove, that deconcentration of work places and services in larger urban areas can lead to diminishing traffic demand. Contemporary authors state, that centralisation is the best pattern of use for a town, while decentralised concentration is better suited for the regional level. In fact, research proves the hypothesis, that towns with increasing concentration of activities towards the town centre are more traffic effective. Towns with one or more comparatively equal centres have a more decentralised housing pattern and greater traffic demand. In a research on Scandinavian towns the conclusion was that, after excluding other variables, energy consumption in the most decentralised town compared to the most centralised town was higher by 27 % (Naess, 196:105).

Concerning traffic on the regional level, the most efficient regions are those with a decentralised multi-nodal pattern. Scandinavian examples show that the extent of voyages and consumption of energy is lower in regions with more well defined settlements, than in regions dominated by one centre. As put by Naess, this is a consequence of more extensive voyages inside towns, rather than between towns (Naess, 1996:62-64). A research on daily migration in fifteen Swedish regions shows an increase by 25 % in energy consumption in centralised regions, compared to decentarlised ones. Despite high mobility in Sweden, it seems that inhabitants of less urbanised regions satisfy most of their needs in local communities (Naess, Sandberg, 1996).

Location of Traffic Generating Activities

Research concerning traffic demand conditioned by general distribution of population and activities is carried out more often than traffic demand conditioned by location of specific activities. Nevertheless, it is almost common knowledge that location of traffic generating activities substantially influences quantity and length of voyages. An alarming fact in many cities are the development of various traffic generating activities accessible only by car. To achieve a balanced traffic system it is necessary to connect these activities to the public transport network (especially on the nodes) and adequately equip them with infrastructure for cyclists and pedestrians.

3. A Review of Practices

Foreign Practices

Traffic conditions in Western European towns haven't been improving although concern over reasons of traffic problems are known. The common denominators of solving traffic problems in various European towns, despite different approaches, were growth of mobility and dispersal of activities. The consequence of dispersal of housing and activities towards the town edge added to growth in mobility. Separation of housing, work places and services was stimulated by concentration of activities in large complexes, usually outside the town centre and on locations, which were inaccessible by public transport or other non-motorised traffic modes. The result was growth in individual car use.

Most international organisations responded to the challenge, organised international conferences and conducted comparative research. The subject was the topic of conferences, organised by the UN, at which declarations, such as Agenda 21, Habitat II and Traffic and the environment, were adopted, containing commitments and guide-lines. Integration of physical and traffic planning is also included in guidelines of the OECD and ECMT.

Table: *Consequences of changes in location or accessibility of some traffic generating activities:*

Location / land use	Effect
Moving offices away from railway stations in Great Britain	Number of train users dropped by 11 % to 0,4 %
Business centres in suburbs in Great Britain	93 % of employees drive to work by car
Business centres in town centres in Great Britain	27 % of employees drive to work by car
Moving the seat of an insurance company from the centre of Copenhagen to the periphery	The share of car users amongst employees grew from 26 % to 54 %
Shopping centres within the city and in the suburbs of London	33 % of users drive to town 95 % of users drive in the suburbs

Source: Owens, 1995:195

Most developed countries have already started solving their traffic problems, of course in different ways. Investment in traffic infrastructure in the USA is directed into improving air quality, in France the emphasis is on efficient public transport, while physical planning is the backbone of changes in Scandinavian countries, as well as Great Britain and the Netherlands, successful practices from the two are reviewed in the continuation.

In Great Britain activities concerning traffic are based on environmental strategy, adopted in 1990. The government issued guide-lines for physical planning with a perspective of diminishing traffic demand, based on research of relations between physical development and travel patterns (UK DOE, 1994). The aim of the guidelines is to direct physical development to locations which diminish voyage distances and the necessity of using cars, thus enabling use of energy efficient traffic modes. The guidelines had many opponents, especially because of the inefficiency of planning and its subservient role versus short-term economic measures. Their advocates prove the contrary. The territories of towns increase by 1-2 % per year in developed countries. The largest share contributed by housing developments (in Great Britain 70 %), meaning a 10-15 increase in 10 years. Individual houses can be used for approximately 60-100 years, meaning that the increase is caused by new housing rather than renewal (Bach, 1995:7). Other activities however have a greater effect on traffic. They exist for a much shorter time and attract much larger amounts of voyages. Thus, there is substantial potential for controlling traffic demand by directing land use.

The fundamental change, provoked by adoption of such planning policies, is the concentration of traffic generating activities on highly accessible locations, for instance, town centres. First estimates claim a 10-15 % cut in fuel consumption in motor car use, that can be achieved with changes in land use in 25 years (T/E, 1994:54). Although decentralised development trends of the last 20 years, at first glance deny the possibility of returning to compact settlements and revitalised centres, advocates of the guidelines claim, that trends can be reversed or redirected. Decisions concerning urban structure are changed frequently, thus a new policy can be implemented. The importance of national involvement is essential in preparing clear strategies and guidelines for local authorities.

In the Netherlands the central government adopted national guidelines for the integration of physical and traffic planning, i.e. the ABC system, 1991. Their purpose is to find sites for particular activities, so as to diminish individual car use and to stimulate use of public transport. In the system, particular sites are marked according to accessibility as A, B or C. Activities are marked according to traffic intensity of employees and customers and according to dependence on cars and freight.. Locations marked A are accessible by public transport and the share of individual car users less than 20 %. Locations marked B are still accessible by public transport, while the share of car users is up to 35 %. Locations marked C are accessible predominantly by car and road traffic. Shops and offices therefore are located in A and B sites, development of shopping malls on C sites is prohibited. Sites which are physically demanding are located on C sites. The system also defines parking policies by specifying the maximum number of parking spaces according to site type.

At the local level in developed European countries, integration of traffic and physical planning is fairly common practice, as shown by a comparison of traffic and physical planning policies in seven European towns (Amsterdam, Grenoble, Hannover, Munich, Stuttgart, Vienna and Zurich), carried out by the DOT (Jones, 1993). The research proved, that in most of the examined towns, traffic-physical plans are reaching conclusion and are being re-checked. Although there are differences in priorities and emphasis, because of geographic, cultural and political reasons, they nevertheless have many common features:

- they are directed into tight connections between physical and traffic policies, especially locations of activities and new housing areas on sites accessible by public transport; support for such decisions is backed by national guidelines;
- the priority is promoting public transport, predominantly on tracks, suppressing traffic congestion is not a priority any more;
- coordinated action of different public transport systems and suppressing competitiveness;
- enforcing environmental standards and effective control system of emissions;
- limited investment into road construction, almost stopped in some towns; the exception are high ways and construction of access to new work places; in some places only ring roads were built or improved;
- limited parking in town centres;
- implementation of traffic calming programmes in housing areas; in most towns the speed in housing areas is limited to 30 km/h; in towns with a standing tradition of traffic calming they have ceased constructing speed breakers and have started with psychological and regulative measures, e.g. Zurich;
- the difference between towns in Great Britain and the others is, that in the latter, cars and facilitating needs of car users are no longer the issue; town streets are understood as a living space and no longer as traffic routes.

The main obstacles encountered in the promotion of such policies are institutional. Above all the problems are control of land use and inability to influence spatial policies in the wider urban hinterland, the source of most traffic (Jones, 1993). Despite many obstacles, the approaches to solving traffic problems in the mentioned towns have nevertheless proven themselves and are still successful starting points in traffic management policies.

Domestic Practices

A survey of recent traffic research, strategies of traffic management and master plans for major Slovenian towns are evidence, that in Slovenia we still haven't overcome the practice of partial traffic management, i.e. independent from physical planning. Acknowledgment of the importance of integral traffic and physical planning for long-term management of urban traffic is scarcely present in domestic practice. As taken from Bach, i.e. when assessing the conditions in Europe, most Slovenian planners still deal with symptoms of traffic problems, such as congestion, emissions, energy consumption, accidents, land use etc. Some however indulge in explaining and resolving causes of problems, especially with accessibility and mobility (Bach, 1995:2).

The basic principle of traffic management in Slovenian towns is securing maximum mobility and not access. By providing adequate infrastructure we wish to facilitate unlimited traffic demand, despite the decade old European recognition of futility of such endeavor. We are also somewhat ignorant of the fact, that such activities promote a dispersed settlements pattern, which retroactively affects dependence on car use or uncompetitiveness of other alternative traffic modes

The traffic conditions in the Slovenian capital are an excellent example of traffic and physical planning in the country. Traffic already exceeds absorption capabilities of the city, its road system cannot cope with traffic flows in rush hours. Rapid motorisation, exceeding 400 cars per 1000 inhabitants and more than one car per household, affects further growth of car use. Construction of high ways will have a similar effect, daily migration could increase and because of weaknesses of the public transport system, the already overburdened road system will sustain added pressure. Compared to West European towns, a definite problem is a decade long lack of interest in public transport, cycling an pedestrian infrastructure. The poor condition of stationary traffic is only an added indicator. Effects of one-dimensional traffic development are visible in the urban structure. Suburbanisation processes have been going on for a long time. The phenomenon of shopping malls on the town edge, predominantly accessible by car, with good parking facilities and the decline of relatively inaccessible areas of the city centre are most evident consequences.

Efforts of solving traffic problems in the capital are more or less partial, short-term and often unsuccessful. The situation is largely ignored by central government, although most voyages are carried out in urban areas which represent the main source and goal of all voyages in the country. Measures such as the construction of an inner city ringroad and garages in the city centre are in fact only attempts at satisfying the growing and almost unmanageable traffic demand. An efficient track public transport system is a long term perspective, but according to some , a somewhat unrealistic option. Numerous attempts proposed to alleviate stationary traffic, such as the park and ride system, have failed because of uncoordinated actions. Therefore it is highly unlikely to speak of an integrated approach to traffic and physical planning. One of the last indicators being contradictory opinions of traffic and planning authorities in the city concerning the building of a garage under the Castle hill.

We can conclude that the conditions in most Slovenian towns are similar, although problems are not as great as in Ljubljana, after all, there there is much less traffic.

4. Conclusions – Established Principles

In conclusion established practical principals of integrating traffic and physical planning measures are presented. We have to be aware of the fact, that it is almost impossible to isolate measures urban policies from other influences, which compromise traffic demand. To a certain extent, the reason being in the only recently acknowledged importance of planning land use to control traffic demand. Even if integrated policies are already being implemented, their effects are long term, i.e. the physical structure of urban areas changes relatively slowly (Owens, 1995:185).

Nevertheless, there is a consensus on a number of principles, summarized from a survey of literature and practical examples, which can, in my opinion, serve as guidelines in the domestic practice:

- urban planning measures are an essential but insufficient condition for diminishing demand for voyages and promoting ecologically friendly traffic modes; the stated measures are only elements of a complex policy of managing urban traffic where co-ordination between sectors and governmental units or levels is important;
- the success of an integrated policy on the local level depends on high quality guidelines and support from the national level; to achieve the noted measures political support is essential;
- integrated traffic planning is in most cases successful if it coincides with urban environmental policies, which clearly defines, largely quantified goals, with high environmental standards, and has an established system of emission control;
- centralisation of uses is probably the most efficient pattern of land use on the municipal level, decntralised concentration is more suited to the regional level;
- spatial development in towns should be directed to sites which diminish voyage distances and the necessity of traveling by car, thus enabling use of alternative traffic modes (public transport, cycling, on foot); such development can be achieved by locating activities and housing near public transport routes, adequate access of these sites by bicycle or on foot, placement of traffic generating activities in the vicinity of public transport nodes and with a policy of selective access, which has to give advantage to alternative traffic modes;
- higher densities in built-up areas represent a pre-condition for diminishing voyages, therefore standards have to be set, which enable preservation of existing densities or their increase;
- dispersed low density housing, dependent on car use; has to be prevented;
- mixed use and combining activities enables, besides the advantages of higher densities, conducting of multi-functional voyages, thus diminishing their quantity;
- provisions have to be made to enact preparation and execution of traffic calming projects in housing areas (30 km/h); own streets should be perceived as living space, rather than traffic arteries;
- urban local supply centres which can satisfy daily needs, social contacts and work places, where traveling is unnecessary, have to be preserved or improved.

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