POTENTIALS FOR INTEGRATED CORRIDOR PLANNING

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ABSTRACT.

This paper selects material from a series of papers presented since 2004 to illustrate some key 'Potentials for Integrated Planning'. It considers our history in transportation and the institutions responsible for transportation planning. It emphasises that to achieve higher levels of integration requires greater effort in the longer term transportation planning activities of government and regional government in particular. This must precede the normal SH and Local Government pattern which focuses on short term funding and operations. The key issues for integration relate to 30-40 year planning horizons so as to achieve integrated national, regional and district transportation planning. This raises the question as to whether the national transportation strategy for integration is real or merely lip service ?.The paper concludes with a commentary on planning for long term corridors and property management drawing lessons from some Christchurch and Wellington examples arising from the past 40 years of endeavour.

BIOGRAPHY:-

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Malcolm is both a Transportation Engineer and a Town Planner. He has held many committee positions in his two chosen professions, including being Vice-President of NZPI (1979-83) and Chairman of the Transportation Group of IPENZ (1984-1986) and a member of the IPENZ Ethics Review Committee (1994-96). Following graduation BE Civil, from Canterbury, in the 1950s he attended Birmingham University (UK) gaining his MSc. in Highway and Traffic Engineering in 1961. Later in 1970 he graduated with a Diploma in Town Planning from Auckland University (NZ). His 55 year career has been with city councils, regional councils and in consultant practice. He has received several awards from both the NZPI and IPENZ for his papers and his professional institution work. He is the author of 'A Wheel on Each Corner'. the Transportation Groups 50 year history. He is a consultant with a practice spanning both transportation planning and regional and town planning.
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POTENTIALS FOR INTEGRATED CORRIDOR PLANNING

1. HISTORIC SITUATION OF NZ TRANSPORT PLANNING

1.1 THE 1960s to 1990s.

New Zealand is dominantly an urban nation with one of the highest per capita expenditures on vehicles and travel in the world. New Zealand has many transportation successes to its credit. However traffic conditions in the three main metropolitan areas of Auckland, Wellington and Christchurch, which have grown at a rate much as predicted in the studies of the 1960s and now finds them stumbling, inevitably into congestion. Observation shows that the UK, Australia and NZ all have travel patterns and planning problems with much in common.

Transport has always been a vital part of central and local government activity from the outset of European settlement in New Zealand. This is reflected in the extent of tracks and road making initially for horse drawn travel (Fig 1) settlement and then the extent of railway construction in the last century (Figs 2-3) and the development of the roading from the 1920s and the motorways since the 1950s (Fig 4). In addition there were the port improvements especially in the 1860s and then again since the the 1970s and airports in the 1960s and these continue with dramatic changes.

Traffic demand and transportation planning was recognised in New Zealand in the 1960s when traffic engineering became an accepted feature of civil engineering. By 1970 the science and art of transportation planning had developed to keep pace with traffic growth. In that early decade 20 cities had undertaken a full round of transportation planning and network improvement studies by 1970. In some cases these had in turn led on to comprehensive reviews of District Schemes.

In 1986 the abolition of the Ministry of Works and Development had many adverse side effects from which the transport planning programmes suffered. That agency was abreast of the environmental qualities and the need of forward transportation planning and, in its time, had given wise advice to Government.

Through the 1980s and 1990s the issues of consistent road and transport corridor planning and road management seemed to be forgotten and in place there was intense changes made in its governance and transport organisations for both central and local government were in a continuous state of re-structuring. Population and traffic growth continued and the investment in transport fluctuated widely. (Fig 5 & 6). The recent revival of interest in Auckland, Wellington and Christchurch of transport corridor planning comes after 30 years of relative neglect, and in some cases abandonment, of good proposals largely because of gross under funding.

The passage of the Resource Management Act 1991, including the limitation of the 5 year life for ‘designations’ and the dismantling of the former regional plans for both the urban growth strategies and transport planning, was fatal to many sound proposals throughout the country. This also engendered a shortening of our planning horizons from 40 years back to only 10 years. These circumstances led directly to reduced government budgets, a lessened ability to integrate land use and transport resources due, in large measure, to the successive restructuring and a loss of skilled transportation engineering professionals from both central and local government.

1.2 HAVE WE A RENAISSANCE ?

The recent revival of interest in Auckland, Wellington and Christchurch in planning for the transport corridors and Urban Development Strategies, comes after 30 years of relative neglect. Words, politicking and breast beating has not reduced the ongoing increase in our dependency on the motor vehicle. While the country's population has doubled since 1960 the vehicle trip making has increased an alarming fourfold. Now all the evidence points to it continuing and trips by all modes increasing 3 fold and driver vehicle trips doubling again in the next 40 years. (Fig 7). The community has allowed congestion to rise and critical parts of the transport system are now 20 to 30 30 years behind where it could (or should) have been.

The planning horizon for urban growth and community planning are 20 to 40 years. The network management horizons for access management and major infrastructure is 5 to 10 years. The project programmes are for 3 to 5 years. (Fig 37). Without confidence at all three horizons then the actions (or in-action) taken in one level can seriously compromise the others.

Only by integration at all three levels with greater technical skill, political commitment and communication within and between the players in each horizon can we move to an integrated planning regime.. The 30-40 year horizon for regional and integrated transportation planning relies on 'strategic models' and on regional arterial network continuity. Without such work on this longer frame it is not possible to have a strategic appreciation of integrated planning of land use and transport. I do not consider this renaissance has yet been widely heralded and, in most areas, it has not yet arrived.

1.4 DO NEW ARRANGEMENTS HELP

Our two largest regions Auckland Regional Council (including ARTA) and the Wellington Regional Council have retained transportation/land use technical resources capable of matching their region's demands in the Regional Land Transport Strategy area. The other regions have failed to keep pace and rely on consensus committees.

Of course transportation planning is only one part of a chain of planning processes. It is this wider issue of planning leadership we are involved with here. The erratic political 'love-hate' attitude to effective transport planning due to re-structuring, the introduction of the RMA and delays in major network improvements have all resulted in discontinuity on transport solutions in the 1980's and 1990s. This in turn has affected planning at all levels. It has also weakened councillor and political resolve for forward transport planning programmes. Furthermore our councils and politicians have generally been indifferent to the consequences of ribbon development, urban spread and dispersed growth (i.e. sprawl). The frequent and inappropriate use of ordinary streets as major traffic arterials and the effects this has had on delaying arterial and motorway network development has resulted in grave disruption at many urban locations with consequent social, community and environmental degradation.

Something has been dramatically wrong with both the availability of total funds and also the system of priority setting. Some how the really important long term strategic primary networks have not entered the priority lists. Two areas of chronic neglect are road side land use access management and long term motorway corridor planning.

Government's NZTS 2002 and the LTMA 2003 achieved a timely change in the transport strategy equilibrium at national level. The legislation is of a form which enables integrated planning for transport the environment and economic development. But it is the wisdom of what is selected which makes the difference. Legislation cannot do the actual planning. It is the skill and the achievements by all the professionals, the technical committees, the community leaders and other players that actually produces the consistency and integration necessary.

2 PLANNING PRECEPTS

2.1 BALANCED NETWORK PLANNING

In terms of finding solutions the last 50 years has given a parade of evidence confirming the necessity of a comprehensive and integrated approach to the transport network planning, improvements and management. But it requires multi agency and multi function integration, single authority initiatives will fail.

We must redirect our attention from 'bottleneck solutions' and 'benefit cost' solutions to a more rational approach to 'network equilibrium' solutions. These are the projects which will lead to future sustainability through longer term policy levels of traffic service over whole networks and for all modes. It would have been disastrous to continue to rely solely on Benefit/Cost ratios as the process for determining priorities for strategic policies and project selection. On its own B/C is not a good tool for inter modal policy choices or for the strategic level of integrated regional network planning.

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2.2 ENVIRONMENT NEED FOR CORRIDORS AND ROOMS

The primary purpose of the Resource Management Act 1991 is 'to promote the sustainable management of natural and physical resources' (RMA Sec 5) and this is the key to both the regional and district planning processes under that Act. Obviously while addressing the environmental effects of a proposal at a particular locality is important this is not enough. The issues must be seen in a much wider and comprehensive framework at the regional level. When viewed in a metropolitan framework there are a range of higher level issues of allocation of land, land use activities, economic resources etc. which must be resolved in long term forward planning terms in order to achieve the RMAct Section 5 environmental precepts. These broader responsibilities of vision and assessments fall within both regional and city/district council responsibilities under the Local Government Act 2002. These big issues must be understood before sound transportation planning can be undertaken.

As Professor Colin Buchanan in his 1966 report to the Christchurch City Council stated:-
"There is only one principle where by an urban area can cope with large volumes of traffic and yet preserve acceptable environmental conditions. This is the deliberate canalization of the longer movements onto a network of road corridors designed for movement, and the deliberate creation and investment in environmental areas (or rooms within the network) where the needs of the environment can predominate."

The relevance of these objectives are ongoing. The definition of the boundaries and centres of our suburbs and the corridors in between has not been pursued as a normal planning practice.(Fig 13) In respect of traffic architecture the construction of corridors with good design for layout, landscape, visual mitigation, noise protection and civic design are understood but seldom applied to ensure integrated planning.

2.3 TRANSPORT SUSTAINABILITY AND PLANNING

In the New Zealand Transport Strategy the sustainability principle is set out as follows:

"*To ensure that transport is underpinned by the principles of sustainability and integration, transport policy will need to focus on improving the transport system in ways that enhance economic, social and environmental well-being, and that promote resilience and flexibility. It also needs to take account of the needs of future generations, and be guided by medium- and long-term costs and benefits.*"

There is no simple code or single measure defining transport sustainability. Sustainable. It is more than a view on environmental impacts, or energy use aspects, or safety, or tolls and funding. It is all these things brought together plus forward planning embracing a comprehensive range of social, economic and physical assessments and decisions . The broad sweep of issues involve both national objectives for transport and social, economic and environmental issues and also regionally and locally defined objectives including strategic plans and development programmes under the LGA 2002..

Regrettably due to a lack of adherence to clear regional urban planning objectives since the 1980s the following general habits and trends in urban form, land use and travel patterns have inevitably led to an increase in vehicle trips and trip lengths.:-

-Increasd congestion on all purpose minor arterial roads resulting in lower levels of service and increased conflict with other modes, safety and abutting land uses.

-. The boom in rural residential and peripheral growth of urban areas reinforces the reliance on individual motor vehicle travel and increases average trip lengths..

- The increasing development of major retail nodes and arterial road retail strip frontages, remote from their community catchments, has dramatically reinforced the need for households, across the full income spectrum to rely on car travel for all shopping trips.

- Commercial frontage and ribbon development has taken up as much as 20-30 % of the traffic capacity of some key arterial roads.

- The absence of good segregated cycle ways increases accident exposure and reduces the attractiveness for general bicycle use.

- The absence of special bus streets, bus lanes and segregated bus ways or facilities providing the 'public bus transport' and 'high density vehicles' routes.

. -. School de-zoning and changing demands in pupil and student travel have broken the traditional walk/cycle habits of the trip to school and has increased school car trips about five fold.

We cannot afford and should not continue in this manner !!.

It seems that 'travel demand management' including quite severe economic measures will increasingly be the means of modifying the trip generation and modal choice tendencies.

Looking to the longer term sustainability must include strategic planning, purposeful growth and decentralisation strategies for our major cities and between our regions. These are tools which still have a potential to affect travel and transportation demand. These major public strategies should precede and be complementary to, the preparation of RLTSs. In this way they provide options to shape land use, transport demand and reduce travel wherever possible.

2.4. TRANSPORT PLANNING INTEGRATED WITH OTHER PLANNING

The LTMA shares with a range of statutory and community decision making, the principles of sustainability . The essence of the response to this legislation is the development and integration of sustainable objectives in all areas of public decision making that affects community change including transport. Change that relates to the evolution of urban structures and the associated transport systems and facilities.

The Land Management Transport Act at last establishes some specific relationships which relate to the processes under other legislation:-

- Regional Land Transport Strategies (RLTSs)
- National (NLTP) and Local Land Transport Programmes (LTP)
- The Resource Management Act (RMA)
- The Local Government Act (LGA)

The Government, NZTA State Highway and Local Government responsibilities in both RMA and LTMA responsibilities are illustrated in Fig 8,9 and 10. There are parallels between these processes. The preparation of the RLTS is less onerous as it has no appeal process in contrast to Region and District Plans under the RMA.

The development programmes for all modes of land transport have now been brought within one ‘basket’ which is overseen by NZTA.

Given these statutory and policy directives at the national level there should be a better more stable relationship possible between central government, regional councils, city/district councils and transport network providers than has existed here to fore. This should lead to more cooperation and be a good augury for inbtegrated planning gin the future.

We must not forget however that the political wing at national and local levels have a love hate, ‘on again off again’ view about transport investment and on occasion lack the willingness to provide leadership in the transportation debate. .

2.5 CONSULTATION AND SUSTAINABIILITY

Another major change, since 1960, is the increased extent of public consultation, public meetings and substantial Environment Court references and hearings. (Fig 11) What is certain is that there is now more public consultation, more submission processing, more litigation, more public relations associated with public authority planning and infrastructure programmes than ever before. One flaw in matching the RMA requirements is that while satisfying the local environmental issues under the RMA, it does not necessarily lead to the imaginative proposal that best matches the big picture of the shape of the region.

Another downside of all this consultation, submission, and litigation is a reduction in the time and resources of planners and engineers available for long term research and planning work in all areas of regional planning and major future transportation planning solutions.

Planning does, of course, ultimately involve convincing the constituency, who pay for the privilege. The really difficult big transportation planning issues require detailed careful, multi-disciplined and robust analysis. Further they require clear strategic objectives, long lead times, careful and consistent analysis, and answers that are excellent and do effectively match each community's real measurable needs while meeting high environmental standards.

These are big challenges where decisions must be made confidently and held to over time, be it 30, 40 or 50 years. Panic and compromise solutions, for reasons of political expediency, should not be part the process of integrated planning.

3. EXISTING ARTERIAL ROAD MANAGEMENT

3.1 EXISTING ARTERIAL ROAD ACCESSES

Integration of land-use and transportation planning is a fundamental tenet for successful planning. When considering existing arterial roads it is essential that the 'footprint' of the corridor consider the roadway (Fig 17), the parking, cycle, footpath and access margins and also the abutting activities, buildings and character of the existing and future development in the area.

Integrated planning also reconciles the three major interactions of :-
- -The relationship between transport routes and land uses.
- -The relationships between transport functions within the transport space and
- -The relationship between regional network links and local networks.

Hans Westerman, the Australian transportation and urban planning consultant, has recently stated:-

'*When extended this (arterial corridor) planning approach combines known practical strategies into one new single management strategy. The framework of these interlocking strategies is:*

1. *Reducing the traffic pressure on and within the sub-region under consideration.*
2. *Managing transport routes and their associated land-use environments.*
3. *Preserving and enhancing the concept of a "city of villages".*
4. *Preserving and enhancing the quality of the local environment.*
5. *Improving local accessibility, safety and convenience, and increased choice in transport mode".*

While the NZTA has done work on Access Management Categories derived for the range of State Highways, it is not yet fuly effective and does not provided for explicit controls in different situations or compel the provision 'access management structure plans' along the 600 kilometres of SH which are under threat of subdivision on the approaches to our major urban areas. I am not aware of any Councils who have adopted such a comprehensive approach or built the 'access management structure plans' into their District Plan.

NZ does well when building a new route, but we are not always successful when adapting existing roads, retrofitting them, controlling crossing places, controlling subdivision and cleaning up the older ribbon development left by the present generation. While the principles are widely agreed the detailed tools for implementation, the application of resources to reverse the trends and retrofit the existing roads has not yet been accepted as a normal tool in maintaining a sustainable network as part of an integrated planning process.

3.2 THE CHALLENGE

New extension and enhancement of the network is only a part of the answer. One of the biggest problems facing us remains, as it was in 1961, control of access and land use management along the existing arterial roads. (Fig 14).

Access control can include a range of matters from providing alternative access, construction of separate frontage roads, provision of medians, prohibition of turning movements, licensing and strict control of crossing points. (Fig 14 and 17) In these ways we can better meet the needs of the more mobile, more active and larger trip making communities of the next 50 years. There must be a clear distinction, or hierarchy of road types, cycle and pedestrian ways. Such policies are needed for safety, convenience, environment and urban form as well as yielding transport efficiency.

Colin Buchanan also stated to the Christchurch City Council in 1966
"The essence of the problem is to establish a hierarchy of networks related to different situations within each part of the metropolitan region. Such a hierarchy would guarantee the exclusive rights of individual links to have different types of movement and different levels of activity from pedestrian areas through to high speed rapid transit corridors."

Nothing, since 1966, has changed as to these principles. The concepts are simple and effective but require major and systematic studies, planning, funding and implementation to be successful.

Access management is inherent in road management so as to protect the environmental, community standards, safety and sustainability which the NZ Transport Strategy espouses.

The environmental standards, amenity outcomes prescribed in the District Plan can be related to the operational performance of the hierarchy of the road in the network and recognised in the Corridor Management Plans prepared by NZTA and the Councils and enforced by both the Council as Road Controlling Authority (RCA) and also the Council as Planning Authority (RMA). Access classification should provide criteria for access to highways according to the purpose, importance and functional characteristics of the specific highway link. The classification must also identify the interaction between transport routes and adjoining areas. This will at critical locations require the preparation of Access management Structure Plans to control adjacent development. An understanding of these interactions is fundamental as it provides a basis for dealing with policy, planning and design issues.

The link must be made between operational performance and amenity safeguards as outlined below diagrammatically.

ROAD HIERARCHY CONCEPT

1. **National Routes.**
2. **Primary/Regional Arterials.**
3. **Secondary/District Arterials.**
4. **Collector Routes.**
5. **Local Roads.**
6. **Notified Public Space.**

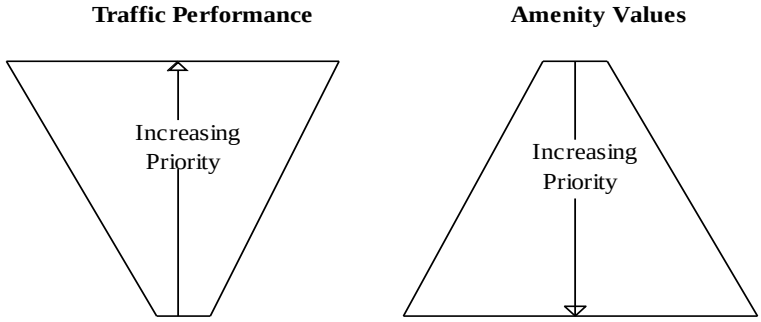

Figure 2.

An integrated planning approach must look at land use, traffic needs and the effects on environmental conditions as equal factors. It must also rely on soundly based forecast models which enable predictive assignments for the road under consideration and the balance of the network in that sector. These elements come together if there is a clear policy on defining the road hierarchy (Fig 14) and 'levels of traffic service' related to each regional network (Fig 18). Then land use friction, route capacity, safety, levels of convenience all come together in an integrated manner.

4 TRANSPORT CORRIDOR MANAGEMENT

4.1 THE ENVIRONMENT

There is no element in our metropolitan urban planning as significant to establishing the mental 'map' of the community than the existing and future transport corridors. Successful corridor planning and their design to meet all of the environmental and community planning issues can do more to achieve sustainable transport outcomes. An appropriately designed and well constructed corridor will gather up all the individual mitigation effects and deal with them in an integrated manner generally within the transportation corridor. The nature of the corridors or motorways and expressways is outlined with some specific examples Figures 19 to 36.

The non-traffic aspects of a transport corridor, such as landscape design, civic design, environment, urban form and regional strategic reasons for having a logical and quality designed set of networks and transportation corridors, are more compelling than just their immediate traffic and transport functions. These corridors for all modes (including roads for vehicles, rail for heavy and light rail, cycle ways and bus lanes) stretching out ahead of demand enable a long term (say 40 to 50 year) reason for the early identification of such corridors.

These issues, which together make up more than half of the reasons for corridor planning, have tended to be overlooked and forgotten in the road or rail authorities desire for single minded progress and gaining a favourable RMA decision on a designation which is as narrow as possible.

These broader planning and environmental objectives still tend to be confined to the drawing office and the board room. They are still not explicit in either the national, regional, or district land transport strategies or in evidence presented in support of such designations At hearings or before the Environment Court. The broader 'urban design', environmental setting ' and 'community quality' issues are seldom encompassed in individual project analysis. They will be considered if there is a 'squeeky' submitter. However they tend to be taken for granted.

The New Zealand Transport Strategy (NZTS) does not help in establishing standards or initiatives leading to an integrated corridor scheme plan. Fundamentally the NZTS has to be underpinned by regional strategies. Both the NZTS and the RMA are not a spatially or design based strategies. Rather they are concerned with rationing funds ensuring proper consultation and mitigating environmental effects on a national basis.

Planning Corridors are regional and city strategic issues, affecting urban form, the regional environment and the confidence for private and public development investment. Linked with the network planning and corridor planning are the fundamental issues and assumptions of regional land use and the strategies which the Regional Policy Statements and District Plans embrace. There are also an array of environmental issues that are the responsibility of the Regional Councils and District Councils. These are the regional strategies for clean air, clean water, regional landscapes, equitable region wide access and other environmental issues which must be considered. This should also include regional urban growth strategies, at least for the six or seven major urban centres which will carry the bulk of the national growth.

4.2 CORRIDOR PLANNING APPROACH.

The Resource Management Act is not the legislative basis for planning future transport corridors. Transport corridors are however one of the best ways of matching and mitigating the effects required by the RMA in the assessment of effects and securing sustainability both within and alongside the corridor. Assessing road 'corridors' comprehensively is useful because:

- different routes have different relationships with adjoining land;
- it shifts the focus from transport routes to these relationships at all stages of planning and implementation;
- there are many different situations requiring different approaches to integrated planning and management;
- it provides the basis for developing networks in new areas and can be used to identify problems, solutions and priorities in established areas; and
- It helps to clarify what type of corridor is to be achieved in the longer term and the kind of changes in transport function, access issues and adjoining development, which will be required in future areas.
- It can accommodate a host of other facilities such as stornm water drainage areas, open space margins, urban tree planiting and forest areas, cycleways, and pedestrian routes.
- It can provide logical boundaries between different land use zones, provide logical boundaries for different suburbs and be the 'corridor between the living rooms'.

Implementation of adequate corridors has proven to be difficult and requires great determination and very early space allocation, ie property purchse. In NZ there are cases where this has been achieved. The Northern Motorway past Kaiapoi, the Wellington Northern Motorway and the Western Hutt Road are good examples. In Wellington the motorway along Porirua harbour is a good example of a multi modal rail and vehicle facility (Fig 36). In Auckland the Northern Busway has been achieved as a multi modal corridor, even if at some points it is regretted the corridor was too tight. When the Auckland eastern arterial is eventually built it will be able to be a multi modal corridor including rail and possibly a bus way. In future such facilities need planning and property purchase completed now at today's prices and sometimes 30 years ahead of their construction.

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Since the mid 1980s, however, events have shown that politically, and in statutory planning terms, it has not yet been possible to protect the traffic corridors or retain the green belt and suburban land use patterns in the clear and firm manner originally intended. The resulting compromises have severely limited the effectiveness of the plans and the future flexible capacity benefits of the most important corridors.

The Christchurch Southern Motorway recently approved and now being constructed is a good example of a corridor of control laid off in 1967 with a 'zone width for control of ' 100 metres. This was narrowed over time to a designation of 60 metres. However in one length where subdivision had commenced this was narrowed still further with the aid of a bund and an ugly fence (for noise attenuation) to only 45 metres of road bed width (Fig 29 and 30). (other key dimensions are 55 metres between the 'noise bund top and fences and a further 15 to 20 metres of council landscape reserve between the fences and the adjacent propery boundary. This places the face of the houses about 20 to 25 metres from the edge of the carriageway. The recommended distance, in the absence of a 'bund and noise fence' on the flat Canterbury plains is 40 metres). The noise bund and fence rtherefore brings houses closer to the carriageway and the consequent 'trench' between the motorway passage walls interrupts the distant landscape views of the Port Hills and surrounding areas. This is in a length where the 2X2 lane configuration is bound to ultimately need to be made a 2X3lane. A new motorway in a 'greenfields' situation designed to accommodate future lanes and/or bus ways etc is recommended internationally to be not less than 70 metres (Fig 20 and 23)

For the main centres of Auckland, Wellington and Christchurch had the major road corridors been purchased in the 1970s, and at that time they were defined sufficiently for that to be done, I have no doubt the transport facilities would be in placeby now. Furthermore the planning processes, even under the RMA, would have been supported by the Environment Court more effectively. This would have also resulted in continued support and confidence in the regional growth strategies.

4.3 CORRIDOR LOCATIONS, URBAN FORM AND CORRIDOR WIDTH.

Generally the major arterial routes and corridors arising from a Regional Land Transport Strategy would pass between the rooms or suburban localities and access control and standards of design and landscaping would be planned accordingly. A complimentary group of street arterials already link most of the shopping centres, which have grown up around the old village centres of the 1800s. The Canberra transport network (Fig 24 and 25 Allen M.Voorhees 1967) illustrate a modern example of corridor planning to advantage.

Increasing property purchase costs and a slavish adherence to Benefit /Cost analysis has latterly resulted in a steady decline in motorway and arterial road corridor widths and space standards. In these cases there are no adequate margins for bicycle paths along the outer berms, or HOV lanes or light rail now or in the future.

The present and future resident must also be protected from the road and the road's from the residents. On the flat Canterbury terrain the houses should generally be placed no less than 40 metres from the shoulder of the road ie a house face to face width across the motorway of about 120 to 140 metres.

The corridors should be treated as extended public open space and planned to collect other open spaces together, eg for water retention and wetlands, and contribute to the urban structure of open space corridors between suburban rooms. Furthermore most often the securing of these corridors is the last chance when such land can be set aside against these future needs. In some lengths, to hell with the cost/benefit related to land purchase. The right of way should be secured and managed for our grandchildren not our present generation (and least of all to satisfy the minister of finance) and they should be contributing to a coherent open space system for the metropolitan urban area.

Successful corridor planning is only possible with integrated planning involving all planning and transportation agencies. It requires coordination across all modes. It must comprise an integrated regional strategy and a plan and funding programme. They only emerge with confidence when planning on a 40-50 year horizon. It is only through a higher level of regional planning, agreements, coordination, funding and commitment by all, that successful and coherent programmes and transportation corridors will ever emerge. The Local Government Act 2002 and the Land Transport Management Act 2003 certainly envisages joint agreements and these types of arrangements between regional and city/district councils.

'A thing of beauty is a joy for ever.' These facilities will be 'for ever'. It is accepted that their internal design, the technology and the vehicles will alter over time but they still require an adequate purchase of a wider space at start up. These areas are 'very public' open space used by the majority of the population. They are green corridors, and the traffic architecture of their more urban sections, become a permanent map of interest and delight in the minds of the population at large.

4.4 CORRIDOR FORWARD PROPERTY PURCHSE

Forward property purchase is a much bigger issue than a piece of land for a road. Property compensation is a real encumbrance that transport providers are ill equipped to deal with. Obviously if the purchase of a corridor is something that only commences 3 years before construction the situation is unsatisfactory all round. The costs of property purchase (i.e. resumption of land for the public good) is a planning matter best accommodated through a regional rolling 'property bank' administered by the Regional Council or jointly by special agreement of Councils in the Region as a planning authorities (ie not as road Authority). The needs for early purchase are very real but the process is in a different time frame from the design and construction phases. With the land pre-purchased by the regional 'property bank' it can be released at the appropriate time for the corridor construction by the road authority concerned.

Road controlling Authorities at national , regional and local levels are poorly placed to be in the property purchase business. They are also under pressure to keep the corridor width to a minimum and sell off land for political and budget convenience.

This has proven to be the case as with the public mischief of the sell off of the 200 properties in the St Albans motorway by Transit and the Christchurch City Council in the 1990s.(Fig 20 & 23) . With corridor purchase being seen as an 'on again off again' process in most regions and repeated community condemnation of 'urban blight' it is time this situation was rationalised. This only becomes meaningful, however, if the designation limitation of the RMAct (Section 184A) of 5 years is removed especially for major multi purpose corridors shared by several agencies and also the joint planning of these facilities as part of regional and district planning.

The issue of requiring designations for motorway corridors and road development is manageable if tedious. An excellent paper by John Hassan *("Current Approaches to Transport corridor Planning in New Zealand –The Role of Designations" Septmeber 2003),* sets out the advantages and pitfalls of this process. He outlines the poor integration between the four different agencies and strategies involved. He stresses the advantage of a National Policy Statement for this process. He particularly points out that the processes of compulsory purchase are too late too little and are left to needlessly await proposal of a requirement and a RMA Environment Court decision too often.

4.5 COMPLEMENTARY REDEVELOPMENT AND REBUILDING COMMUNITIES

Corridor development has to be undertaken on a wider basis than required just to match the minimum transport needs alone. As a general rule effective corridors will require the redevelopment of the land uses in the adjacent areas alongside the transport corridor. This added area can be used for open space, cycleways, reserves or be usefully redeveloped for other urban purposes. Frequently the joint land purchase balance sheet, resulting from early purchase of the corridor before urban development takes place results in the end with a financial credit. This residential and industrial renewal and redevelopment involves both public and private sector development processes. It requires good quality integrated planning techniques for it to be achieved successfully.

Only when the adjacent areas are undergoing this renewal and redevelopment process concurrently with the transport corridor development do we have the win-win integrated planning situation yielding successful design and maximum benefits. Only through integrated planning of this type can the need for the mitigation of tall 'noise walls', the problems of community 'severance' and the disparate 'separation' of individual agency actions can be overcome.

POTENTIALS FOR INTEGRATED CORRIDOR PLANNING

5 RECOMMENDATIONS AND CONCLUSIONS

5.1 CORRIDOR PLANNING RECOMMENDATIONS

The advantages of integration and multi purpose planning are readily demonstrated on transport corridor planning and also in outline planning for access management. For corridor planning and access management the lessons from the past 50 years lead to the following conclusions and recommendations :-

Need for Corridor Planning The absence of coherent Corridor Planning as a long term regional strategy and as part of Regional Land Transport Strategies is a serious shortcoming. ALL of the transportation and relevant planning agencies must share in this process and promote the outcomes. The planning of major multi purpose corridors should be explicit in future RLTS and Regional Plans under the RMA.

Need for Good Practice Manual on Corridor Planning to be established
Perhaps between the three areas of legislation, RMA. LTMA, LGA, there could be some schedule developed covering corridor property purchase. However the alternative is to include these basic needs in a suitable 'Good Practice Manual' developed by IPENZ, NZPI, NZILA, NZIA and other professional bodies. A National Standard could also be prepared.

Establishing Centres of Corridor Planning Excellence. The planning of transportation corridors assumes that resources for systematic and ongoing strategic regional planning and modeling processes are available. This is a local government responsibility and in the present situation it would seem that the transportation sections of the three regional councils of Auckland, Wellington and Christchurch should provide resources of Corridor Planning excellence in order to assist their neighbouring regions and their Districts with such a programme.

Access Control The principles of Limited Access Roads and management of access and provision of alternative access have been around for 50 years. It has been subject to a lack of firm application and there is now an urgent need to recover lost ground in both rural and urban areas as both a Transport and a District Plan priority.

Designations The present RMA Section 184A provision of designations having a 5 year life should be deleted from the statute. At critical locations it may be necessary to designate 30 years before construction commences. A form of zoning control for protection of wider corridors should be introduced as a means of corridor development control for early corridor planning.

Ample Corridor widths is essential to achieve multi purpose facilities with multiple use corridor margins (eg cycle ways, pedestrian ways, grade separation, on occasion bus lanes, HOV lanes and light rail tracks) as well as improved landscaping, improved buffer areas and integration with adjacent development. To achieve this no new motorway should be proposed with a designation of less than 70 metres width.

Land Purchases for future transportation corridors are a regional and local planning obligation and should not have to be the sole responsibility of the road or transport agency. The forward purchase of land for future transportation corridors could be advantageously included in a local government regional land bank rolling programme.

5.2 GENERAL CONCLUSIONS

I have outlined some of the key elements in multi function corridor planning. Such corridors can lead to a coherent, safe, convenient community's through a process of integrated planning. These aspects are not one off. They are all matters that must be worked at continuously.

Most of the secondary or 'intangible' benefits fall within the environmental and planning responsibilities of the City and District Councils and their District planning. They are areas additional to and complementary to the transportation issues. This again points to the need of joint ventures and sharing responsibility and funding to secure integrated planning.

In the past,(1950s and 1960s),I confess that, the Regional Transportation programmes may have been too ambitious. However they were soundly based and should have been continued, even if delayed, they should not have been abandoned. The political withdrawal and funding limitations have led to unilateral Government, Councils and NZTA abandonment of key network elements. This can be avoided with good regional transportation plans supporting the RLTS.

Integrated Transportation Planning is only possible if the matrix of Plan Horizons of

3-5 years for construction,
5-10 years for asset management
20-40 years for corridor and network planning

is being undertaken continuously and the planning is coordinated technically between the national, regional and local teams. (Fig 31)

Regional structure planning and urban design both benefit greatly from strategic land use and transportation corridor planning. This provides the frame work for the 'corridors', 'rooms' and 'monitoring' of both urban and rural areas and points to identifying compatible and timely transportation solutions including transportation corridors. It is essentially a major area of future research and planning which is unique to the geography of each region.

A well considered Regional Land Transport Strategy supported by some Regional Plans under the RMA provides the best framework and a sound basis for reconciling the broad range of transportation, environmental and community issues associated with the integrated planning for major transportation corridors.

A Council's District Plan, covering the same principles, remains the correct framework for the majority of arterial and local street corridors including local living street networks and recognizing the footprint of activity alongside the transport corridor and over selected lengths declaring them limited access..

Control of Access and Transport Corridor Planning have been neglected. They are exciting areas of planning that alter the perspective on regional and urban planning as well as transportation planning. They have the potential for a major rallying point around integrated planning so as to secure more sustainable transport and vastly improved environments for the future.

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