CHAPTER 5
INTEGRATED SPATIAL VISION
5.1 Introduction

Transport and land use are inextricably linked. A relationship exists between land use and transport whereby transportation infrastructure attracts land use development and, in many respects, land use development is unlocked by the provision of high-quality, integrated transport infrastructure and services. The main objective of land use planning is to ensure that economic development is stimulated and that the spatial locations of activities, people and amenities, in turn, have a positive impact on the local, regional and national economy. These objectives can only be achieved with the support of transport services.

Several changes have occurred since 2008 in land use and development planning policy. A number of visionary strategies were developed since and provide a clearer direction for the spatial structure envisioned for South Africa. These are the (NDP 2030, the Draft Integrated Urban Development Framework (IUDF) 2014, strategic integrated projects (SIPs) identified by the National Infrastructure Plan 2012 (NIP), the Neighbourhood Development Partnership Grant Framework (Urban Network Strategy 2014/15) and the Spatial Planning and Land Use Management Act (SPLUMA).

The integrated spatial vision proposed by the NDP 2030 is an important informant in the implementation and philosophy of the NATMAP 2050. In order for the NATMAP 2050 to fully contribute to the success of the NDP 2030, SIPs and other existing and emerging policies and strategies in transport, it is important to understand the relationships between land use and transportation and to provide an overview of the key issues pertaining to land use planning, observations from current land use planning, future spatial vision and its impact on transport planning, and the required interventions to achieve the NATMAP 2050 vision.

5.2 Relationships between Land Use, Transportation and the Economy

There are good reasons why any government should seek to have a thorough understanding of the nature and importance of the relationships between transport provision, spatial planning and the economy. Because transport can facilitate economic activity, it is necessary to consider the impact of transport on economic growth and on proposals to invest in infrastructure. Governments are usually committed to promoting sustainable development whilst embracing environmental, economic and social objectives. Developing a clear understanding of the link between transport, the economy and land use development is difficult. Asking questions about that relationship challenges a fundamental and obvious assumption: that economic growth, the need for movement, the need to develop spatially and the need to invest to facilitate that movement go hand in hand. Whilst it is not the intention here to debate the link or causality between these components, it is sufficient to acknowledge that the link exists and is important in planning our future transport system.

In order to ensure efficient decision-making, the economic justification for transport infrastructure must be as robust as possible while taking into consideration its impact on land use and the environment. The provision of transport infrastructure is mainly a public function. Hence, government financing and investment are justified on the basis of promoting economic growth. The provision of infrastructure has to be sympathetic to spatial needs.

5.3 Key Issues Relevant to Land Use Planning

Transport planning and the provision and implementation of transport infrastructure do not exist in a vacuum; they have a strong spatial connection. Therefore, it is essential to consider land use, sectoral and other economic activity, settlement patterns, legislation, policies, and related initiatives that have an influence on transport. For transport and land use to work better together, there is a need to address some of the following key issues pertaining to land use planning:

- **Integrated planning** – The integration between economic development and spatial planning is evident in the progress made in transforming the country. Limited integration and coordination are evident between national, provincial and local level land use planning. These elements cause related infrastructure and transport services to be provided in an uncoordinated manner (refer also to Chapter 13).

- **Coordination between spheres of government** – A lack of coordination is prevalent in South Africa, especially relating to multisectoral land use developmental projects. To avoid duplication of effort and resources, an improved level of coordination and constant consultation is needed between the 3 spheres of government and the private sector. There is a particular need for this with projects in sectors such as mining, agriculture, forestry, manufacturing, commerce, tourism, education, health, housing, urban development and transportation (refer also to Chapter 10).

- **National spatial vision** – A lack of a clear vision for the future spatial context of South Africa is hampering the change in how the country is planned and land use is managed. However, significant progress was made towards developing a spatial vision with the promulgation of the Spatial Planning and Land Use Management Act (16 of 2013) (SPLUMA). Also, development of the National Spatial Development Framework has commenced and is
set to further strengthen the relationship between land use and transport planning.

**Development corridor approach** – The identification of development corridors and the focusing of economic development around these could improve the socio-economic opportunities of the captive population around these corridors. However, there are limitations on opportunities accessible by the communities not situated along the corridors. It is important to understand the sensitivity and functionality of a corridor and to ensure its mobility function versus that of its accessibility function. By focusing economic development, housing and other civil services at specific strategic nodes along a development corridor are deemed more sustainable.

**Institutional arrangements** – Institutional arrangements are a key land use planning concern and we should seek to integrate and work together across institutions to prevent fragmented development patterns. It is also important that we enable spatial and transport investment and ensure implementation decisions take place at the local municipal level.

**Settlement patterns and formal and informal economic activity** – The interface between settlement patterns and economic activity is an imperative in planning transportation and land use development. Planning must address the transport needs of the many South Africans who function outside of the formal economy and/or formal settlement areas.

**Physical factors that can hamper the development of transport infrastructure** – These include topography, climate and geotechnical issues, environmentally sensitive areas, and the location and spatial distribution of good agricultural land.

**Fragmented development patterns** – The need for integration, consolidation, and normalisation within the provincial, urban, and rural spatial systems must be addressed to ensure sustainable transportation development.

### 5.4 NATMAP 2050 Future Spatial Vision

The land use development directives formulated for the NATMAP 2050 broadly focus on settlement development, rural development, economic growth, and integrated and sustainable development. The directives that guided the spatial vision for the NATMAP 2050 were influenced by land use policies and current development trends and are summarised as follows:

- **Settlement and investment must be encouraged in areas with high development and economic growth potential.**
- **Settlements of exclusion must be linked to areas with economic opportunity.**
- **Transportation must support an integrated settlement pattern.**
- **Growth and development must be environmentally sustainable.**
- **Key rural areas must be developed into sustainable economic entities.**
- **Industrial development must focus on international markets.**
- **Comparative and competitive advantages of regions must be exploited.**

These directives were developed during an extensive stakeholder process with national, provincial and local government. These directives and a detailed analysis of prevailing and envisioned growth settlement patterns (urban and rural) and mining, agricultural and tourism activities guided the development of 3 population and land use scenarios for the NATMAP 2050. For the purposes of the NATMAP 2050 future planning, 3 (low, medium and high) land use and population growth scenarios were developed.

These scenarios were evaluated in terms of the land use development directives presented above to determine which scenario fit these directives best. The middle scenario was selected for the development of a spatial structure and transport system for the NATMAP 2050, the reason being that the scenario best achieves land use and transportation integration. In part, this is due to the fact that the middle scenario strikes a balance between urban and rural development.

The national and provincial transportation network does have certain limitations in implementing this balanced land use development scenario, though. These limitations were identified through stakeholder engagement with national, provincial and local government during the status quo phase.

To ensure that the NATMAP 2050 future spatial vision can be implemented over time and will provide an integrated system between land use, economic development and transport, which provides mobility to people and goods and accessibility to economic opportunities, employment and other social services, the following focus areas to ensure alignment were identified:

- **Need to focus transportation network development on existing corridors.** The existing and proposed corridors should form the focal point of the transportation systems development for 2050. These corridors link nodes and hubs identified in the spatial frameworks and in areas where there are economic opportunities. In addition to the existing national and provincial corridors, the emerging national corridors need to be prioritised for detailed planning and alignment across the provinces.
- **Emerging national corridors.** The various provincial strategies that focus on the alignment of land use development and transport systems identified a number of key emerging national or interprovincial corridors. These include the main existing corridors and new emerging corridors that need to be given priority by the government. Most of these are interprovincial or SADC regional corridors.

These emerging corridors needs to be given priority in terms of more detailed planning, the alignment of...
provincial development programmes amongst each other, and also the alignment of the national spatial development framework and subsequent national development programmes.

- **Economic nodes or hubs.** The nodes or hubs are areas of high-intensity land use activity located along or at the start and end points of existing, emerging or national corridors. Nodes may be areas of residence, industrial activity or trade that are the generators of transport demand – meaning that the flow of goods along transport corridors generally occurs between these points.

- **Consider alternative modes of transport.** Specific land use is linked to appropriate modes of transport – for example, rail is the preferred mode of transport to carry bulk materials over long distances. Integrated spatial and transport planning will improve the interface between the transportation network, development and the use of land. The NATMAP 2050 is not a spatial development framework. However, it aligns with the latest spatial strategies and approaches and provides inputs and recommendations for transportation infrastructure development.

Addressing the limitations of the above aspects within the existing transportation network can assist to improve the integration of land use and transportation.

Through proper spatial and development planning, an improved interface between transportation network development and land use planning (including spatial planning) can be promoted, thus improving land use and transportation integration.

It has to be stated that the NATMAP 2050 is not a Spatial Development Framework (SDF) and can, therefore, not guide or direct spatial development within any province. However, it can and does provide inputs and make suggestions with regard to transportation infrastructure development, which, in turn, will impact on spatial development, as the network provides better accessibility to bias-specific land uses, settlements and areas within each province.

**Figure 5.1** distinguishes between international (SADC), national and provincial corridors, as well as the type of infrastructure that needs to be developed, i.e. freight rail, passenger rail, road and tourism routes. The main land use nodes that are connected by the corridors are also given. The corridors are also important to link the regions of the country where 75% of the South African population is located with economic opportunities.

**Figure 5.1** also illustrates the interaction and location of existing, emerging and national, provincial and international corridors, the settlement hierarchy and other spatial indicators relevant to the NATMAP 2050 spatial planning. The prominent features are:

### 5.4.1 Regional corridors

- **Regional North–South Corridor** – The regional north–south corridor extends from Durban up to Johannesburg along the N3, whereafter it follows the N1 alignment up to Musina at the border between South Africa and Zimbabwe. The corridor extends further north along a number of branches and eventually terminates in Dar es Salaam, Tanzania. The north–south corridor is a critical strategic link between South Africa and its northern neighbouring African states.

- **Maputo to Walvis Bay Corridor** – This corridor is one of the most important corridors in southern Africa. It connects the eastern and western coasts through the N4 East from Maputo to Gauteng and the N4 West from Gauteng to Walvis Bay and Botswana and forms a transport corridor over the breadth of southern Africa. Its primary objective is to enhance economic growth through increased local, regional, and international trade.

- **N4 eastern corridor (Maputo corridor)** – This corridor forms part of a broader corridor network that links Maputo to Walvis Bay. The N4, a rail line, and a pipeline connect the major economic centres and industrial hubs of Gauteng, Emalahleni, Middelburg, and Mbombela with the ports of Maputo. The objectives of this corridor are to maximise investment, social development and employment opportunities and to provide access to regional and international markets.

### 5.4.2 National corridors

- **N1 Corridor** – The N1 corridor crosses South Africa from the Western Cape to Musina in the north of Limpopo and covers Gauteng and the Free State. Many of these areas have expansion potential due to rapid urban expansion. The N1 is the most important national and regional transport corridor and is the road–rail link to Gauteng.

- **N3 Corridor (Durban–Free State–Johannesburg)** – The corridor serves as a direct link between Durban and Gauteng via Harrismith in the Free State. It provides access to the Germiston rail freight junction and the city deep container depot and ties into the A1 north–south corridor of Africa.

- **N2 Corridor** – The N2 corridor links the coastal regions of KwaZulu-Natal, the Eastern Cape and the Western Cape. If the proposed expansion of agriculture and forestry activities comes to fruition, the upgrading of sections of the N2 will be essential to facilitate the movement of large freight volumes. The corridor could also be extended to provide public rail that will contribute to alleviating the commuter congestion between Mossel Bay and Knysna.

- **N11 Corridor** (Limpopo–Botswana–Richards Bay) – This corridor links Limpopo to Botswana in the west and Richards Bay and Durban in the east and provides access to the United Nations Educational, Scientific, and Cultural Organisation (UNESCO) Waterberg biosphere reserve. The extension of the freight rail line from Lephalale to Botswana provides an alternative mode within the corridor from Limpopo to Botswana.

- **N12 Corridor** – The N12 corridor between Johannesburg and Witbank holds significant potential for economic spin-off export opportunities, given the importance of the railway line along this corridor.
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Figure 5.1: EXISTING AND NEW/EMERGING NATIONAL CORRIDORS
Sishen–Saldanha Ore Line Corridor – This corridor connects Sishen in the Northern Cape to the Port of Saldanha Bay in the Western Cape and transports primarily iron ore. This corridor is an exclusive freight corridor, as no passenger rail services are provided along it.

Richards Bay Coal Export Line Corridor – This corridor connects the Mpumalanga coal fields to the coal terminal at the Port of Richards Bay. It is the second largest coal railway in the world, delivering 76 million (2013) tonnes of coal per year – clearly indicating its strategic importance to South Africa and the region.

Moloto Rail Corridor – This rail corridor is a proposed regional rail line to link Gauteng, KwaNdebele and Siyabuswa urban centres. It will alleviate the significant pressure on the congested Moloto Road corridor, along which accidents frequently occur. Affected municipalities and planning authorities’ integrated development and transport plans will have to be updated to ensure alignment with the initiative. Alignment should include, but not be limited to, road feeder services supporting the railway line, together with the provision of high-quality transfer facilities. It also presents the opportunity for transit-orientated development (TOD).

Waterberg/Burgersfort Mining Belt – Chrome, vanadium and platinum are found and mined on this belt, which is situated along the edge of the Bushveld Igneous Complex. Exporting is done by rail and sea to international destinations via the Richards Bay harbour. While there is great potential for growth, this industry requires a well-developed transportation network – particularly for the transportation of chrome ore, due to the pressure on the R37 corridor in Limpopo, between Polokwane and Nelspruit (Mbombela) via Lydenburg and Burgersfort. The proposal is to upgrade the R37 linking the N1 from Lephalale to Burgersfort via Lydenburg to the N4 corridor and the Maputo harbour to export platinum and chrome.

5.4.3 Emerging corridors

Ngqura (Coega) Manganese Line Corridor – The corridor connects Hotazel, Kimberley and Port Elizabeth via rail and Bloemfontein to East London via road. It plays an important role in linking freight and raw materials to the Port of Ngqura, an important IDZ and SEZ for South Africa both now and in the future.

N6 Corridor – The N6 corridor provides a north–south link from East London in the south to the Free State in the north. Due to its proximity to the Richards Bay, Durban and Maputo ports, it can accommodate low volumes of export freight. The N6 is expected to become more important once the Coega development has taken off.

Treasure Corridor – An SDI links the North West to its neighbouring provinces and opens up international linkages with Botswana and Mozambique. In the Klerksdorp area, 42.3% of the corridor’s economy is in the mining sector, and the agricultural sector dominates the Wolmaransstad and Christiana districts.

5.4.4 Economic nodes

Platinum spatial development initiatives (SDIs) – The primary objectives of these initiatives include economic growth through increased local, regional, and international trade. The SDIs are strengthened by the N4 West corridor (also referred to as the Platinum Highway).

Drakensberg Tourism Area – The Maloti–Drakensberg Trans-frontier Park in the Clarens–Qwa-Qwa area is an important potential tourism node.

Musina – Musina is the gateway to South Africa from our northern neighbouring African states via the Beit Bridge border post. Musina lies on the north–south corridor and is an important gateway to the trade with the SADC region.

5.5 Key Changes in Policy Relevant to Land Use Planning

A number of visionary strategies have been developed since 2008 and provide a clearer direction for the spatial structure envisioned for South Africa. These strategies include:

- The National Development Plan 2030 (NDP 2030)
- The Draft Integrated Urban Development Framework (IUDF) 2014
- The Strategic Integrated Projects (SIPs) identified by the National Infrastructure Plan, 2012 (NIP)
- The Neighbourhood Development Grand Strategy 2014/15
- The Spatial Planning and Land Use Management Act (SPLUMA) yet to commence.

5.5.1 NDP 2030

The spatial development aims of the NDP 2030 are focused on the need to address inherited spatial divisions and call for a strategy that focuses on the space economy to address the legacy of the apartheid geography and create conditions for more humane and environmentally sustainable living and working environments by defining a spatially targeted approach.

The NDP 2030 calls for a spatial targeting structure to include a national economically competitive corridor that connects Gauteng and eThekwini; nodes that are of national importance and that are economically competitive; the Cape Town, eThekwini, Nelson Mandela Bay and Buffalo City regions; rural restructuring zones; resource-critical regions; transnational development corridors; special intervention zones, including job intervention zones for regions that have lost over 20% of their jobs over the past decade; growth management zones; and green economy zones.

The exact localities of these nodes and zones are not clearly defined in the NDP 2030. Therefore, the need for the
development of a national spatial development framework that responds to the call for a space economy strategy is the objective of the development of the Spatial Planning and Land Use Management Act (SPLUMA).

5.5.2 Spatial Planning and Land Use Management Act (SPLUMA)

The aim of this act is to provide a structure to develop a clear vision for the spatial development of the country. The implementation of land use systems and operational structure form a major part of this initiative. The first step is to develop a National Spatial Development Framework and the intention is to deliver this by 2016/17.

5.5.3 National Infrastructure Plan 2012 (NIP)

The NIP sets out to create a significant number of new jobs, strengthen service delivery and support the integration of African economies. The plan presents the spatial mapping of infrastructure gaps that was used to analyse future population growth, projected economic growth and areas of the country that are not served with water, electricity, roads, sanitation and communication. The areas with the highest need were identified and 18 strategic integrated projects (SIPs) were proposed. The Presidential Infrastructure Coordinating Commission (PICC) has been tasked to develop a 20-year planning framework to implement these SIPs.

5.5.4 Integrated Urban Development Framework 2014 (IUDF) (Draft)

This framework is a response to various chapters in the NDP, but primarily responds to Chapter 8 of the NDP 2030, ‘Transforming human settlements and the national space economy’. Its vision for urban South Africa is: “By 2030 South Africa should observe meaningful and measurable progress in reviving rural areas and in creating more functionally integrated, balanced and vibrant urban settlements. For this to happen the country must: clarify and relentlessly pursue a national vision for spatial development; sharpen the instruments for achieving this vision; [and] build the required capabilities in the state and among citizens.”

The 7 policy levers of the IUDF relevant to the NATMAP 2050 are:
- Integrated transport and mobility
- Integrated sustainable human settlements
- Integrated infrastructure planning
- Inclusive economic development
- Efficient land governance and management
- Empowered active communities
- Effective urban governance.

In implementing the IUDF, the policy levers require actions to be taken by more than one national department. In the collaboration, integration and coordination of different departments, the potential of urban areas is maximised through the alignment and integration of investments in the following primary drivers of urban development:
- Human settlements
- Transportation (public modes and roads)
- Infrastructure networks comprising social, economic and ecological infrastructure
- Various land use regulations and effective governance that underpin all of the above.

The IUDF also identified a hierarchy of nodes and corridors.

5.5.5 Master Spatial Plan for Human Settlements

This master plan is currently in development. The aim of the plan is to reverse the apartheid legacy of spatial segregation through a strategic spatially targeted approach to land identification and assembly for inclusive, integrated and sustainable human settlements. The strategy proposes the alignment of political, legislative, institutional and financial elements as critical components to the realisation of spatial transformation. The incremental approach proposed above should enable provinces and municipalities to integrate spaces and transform places as a national developmental priority. These can be achieved by creating compact, connected and integrated settlements.

The plan also indicates alignment between various spatial investment strategies. On national level, programmes and initiatives are compared to show alignment between them. The programmes and initiatives compared include social housing projects, rapid growing areas, special economic zones, industrial development zones, municipalities where the National Upgrading Support Programme is implemented, municipalities where the Comprehensive Rural Development Programme is implemented, Urban Development Zones and municipalities with high-intensity mining activities.

Figure 5-2 illustrates these programmes and the settlement hierarchy presented relates to the classification of settlements by Todes and Harrison (Chapter 3), taking into consideration population and the contribution of the specific area to the economy. This settlement hierarchy was the first response to the call of the NDP 2030 to ensure integration between economic activity and areas where people live, the so called space economy.
5.5.6 Neighbourhood Development Programme (NDP)

The strategic role of urban centres in enabling the necessary conditions for achieving key government outcomes is well documented, locally and internationally. During 2011/12, the NDP evaluated the performance of the NDP grant and, as a result, embarked on a process of strategic planning to deepen value for money and long-term impact. The result was the formulation of a new strategy, known as the Urban Networks Strategy (UNS), which is a pro-poor/pro-growth investment approach.

5.5.7 Urban Networks Strategy (UNS)

The strategy is aimed at facilitating the eradication of spatial inequality to enable the creation of liveable, sustainable, resilient, efficient and integrated human settlements. The focus of this strategy is to shift infrastructure investments towards the creation of efficient and effective urban centres through an approach of spatial targeting of public investment, primarily infrastructure.

An urban network is a city-wide interconnected hierarchy of strategic nodes and public transport links between and within nodes. It consists of primary and secondary networks that interconnect at strategic nodes known as urban hubs, which are located within marginalised areas, typically townships.

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The new strategy is reflected in the amendment of the 2014/15 DORA NDPG Framework, confirming that future NDPG allocations will be focused on municipalities and projects that align with the NDPG’s prioritisation criteria. These include population densities, levels and diversity of economic activity, concentration of poverty and the presence of connectivity networks e.g. public transport. The application of these criteria across the NDPG portfolio of municipalities has resulted in the identification of 18 urban municipalities, including South Africa’s larger urban centres as well as key regional service centres. These cities include:

**Metros:** Buffalo City, City of Cape Town, City of Johannesburg, City of Tshwane, Ekurhuleni, eThekwini, Mangaung, Nelson Mandela Bay.

**Secondary Cities:** City Of Matlosana, Emalahleni/Witbank, Emfuleni, Mbombela, Mogale City, Msunduzi, Newcastle, Polokwane, Rustenburg, Sol Plaatje.

5.5.8 National Urban Renewal Programme (URP)

The Urban Renewal Programme, which focuses on 8 urban nodes of poverty, is aimed at focusing the resources of the government in an integrated manner towards breaking the cycle of underdevelopment in cities. Eight URP nodes were identified: Alexandra in the City of Johannesburg, Mitchells Plain and Khayelitsha in the City of Cape Town, Inanda and KwaMashu (INK) in the eThekwini Municipality, Mdantsane in the Buffalo City Municipality (East London), Motherwell in Nelson Mandela Bay (Port Elizabeth), Galeshewe in the Sol Plaatje Municipality (Kimberley). These nodes are included in the 18 cities/urban areas included in the Urban Network Strategy.

Figure 5-2 illustrates projects, nodes and development areas for the above-mentioned plans and initiatives.
FIGURE 5-2: NATIONAL SPATIAL AND DEVELOPMENT AREAS INITIATIVES 2013
5.6 Spatial Integration of NATMAP 2050 with Latest Policies

The latest spatial planning policies, frameworks and legislation have one common theme: to integrate all elements of a human settlement on local, provincial and national level. Furthermore, a holistic approach to land use, economic development, transport and related services are called on.

Comparing the land use directives developed during the NATMAP 2050 with these latest policies, the approaches to define the spatial structure and to integrate land use and transport planning align on national level.

Figure 5.3 illustrates the latest development areas and settlement hierarchy in comparison with the spatial structure of the NATMAP 2050. It is evident that these align and the development corridors and emerging corridors identified connect the areas of rapid development, mining areas and other salient spatial features.

The alignment of the salient features defined in the NATMAP 2050 with the latest spatial vision and initiatives are summarised per defined NATMAP focus area:

- **Existing transport corridors**: The existing corridors identified in the NATMAP 2050 align with the following strategic integrated projects:
  - SIP 1 – Mpumalanga–KwaZulu-Natal Coal Power Corridor (NATMAP – Richards Bay Coal Export Line Corridor)
  - SIP 1 – Limpopo – East–West Corridor (NATMAP – Waterberg/Burgersfort Mining Belt)
  - SIP 5 – Sishen–Saldanha – Eastern Cape–Northern Cape (NATMAP – Sishen–Saldanha Ore Line Corridor)
  - SIP 4: Unlocking Economic Opportunities in the North West (NATMAP – Platinum Spatial Development Initiatives).

- **Emerging transport corridors**: The emerging corridors identified in the NATMAP 2050 align with the following strategic integrated projects:
  - SIP 3 – South–east node and corridor development (NATMAP – Drakensberg Tourism Area)
  - SIP 3 – South–east node and corridor development. Manganese rail line expansion, Hotazel – Kimberley rail upgrade (NATMAP – Ngqura (Coega) Manganese Line Corridor)

- **Economic and development nodes**:
  - The Urban Networks Strategy (UNS), IDZ, SEZ, UDZ, mining municipalities and rapid growing areas include all the economic nodes of importance identified for the NATMAP 2050 strategic transport network. Mahikeng is one of the main nodes identified in the NATMAP 2050 that do not form part of any of the mentioned initiatives. It is, however, known that the development of an IDZ in Mahikeng was recently dispersed. The correct mechanism to initiate development in the area needs to be investigated.
  - **Social housing and SIP 7 (public transport)**
    - **alignment**: The provision of high-quality public transport systems rely on increased densities at nodes along these state-of-the-art systems. The alignment between the UNS, UDZ, social housing projects and SIP 7 projects is evident. Social housing initiatives provide the opportunity for densification and bringing the poorest of the poor closer to opportunities of work.

- **Rural–urban migration and rural development alignment with SIP 6 and SIP 11**: The rural–urban migration trend is clearly indicated by the NATMAP 2050 demographic estimates and forecasts. Migration from rural areas has a significant impact on rural development and an equitable return on investment. With the focus of SIP 6 to provide national capacity to assist 23 areas to eradicate all the maintenance backlogs and to bring about the required upgrades in water, electricity and sanitation bulk infrastructure will assist in the attempt to attract investment to rural areas and sustain existing economic activities, and, thus, limit rural–urban migration patterns. In the long term, this initiative sets the scene for the development of rural areas into sustainable economic entities.
FIGURE 5-3: SPATIAL INTEGRATION OF THE NATMAP 2050 WITH LATEST POLICIES
5.7 Implications for Transport Planning

The development and implementation of the NDP, IUDF, SPLUMA and other emerging plans provide the long-awaited spatial vision that will enable South Africa to develop a National Spatial Development Framework that is based on sustainable human settlements and space economy. In this radical new policy approach to land use planning, the integration between transport and land use are forced to achieve a more optimal outcome.

The following drivers are identified as critical to the successful execution of the NATMAP 2050 and the alignment of this plan with the new thinking of integrated planning:

- SPLUMA (promulgated but not in effect) and the IUDF (Draft) (still in development) need to be implemented to ensure that the spatial vision of the country on national and local level can be implemented and will guide the development of spatial plans on all levels.
- Land use and transportation integration is extremely complicated and has major developmental implications at micro and macro level. Transportation can serve as a structuring element and as an expression of derived demand.
- The National Transport Forum (NTF) was launched in December 2014 and will enable land use and transportation integration at all spheres of government. The NTF, supported by local partnerships, will greatly enhance decision-making and coordination by being the custodian of a central transport information bank and by working with other government departments to share and disseminate information.
- Interface between land use and transportation planning. The interface is not static but highly dynamic and is subject to influences from both the public and the private spheres.

- Strategic integrated projects (SIPs) focus infrastructure investment on 18 identified projects. These projects comprise corridors and nodes. Importantly, the top 4 projects align with the main transport corridors identified by the NATMAP 2050. The alignment of the SIPs and the corridors and nodes identified in the NATMAP 2050 are illustrated in Figure 5-3.
- The Urban Network Strategy identified 18 urban nodes to focus infrastructure spending, public transport system development, housing and urban management. These nodes form part of the nodes and corridors identified as strategic to the transport system in South Africa. This re-focusing of urban development and management integrates with the NATMAP 2050 vision and represents the first phase of integration between the disciplines.
- Special Economic Zones (SEZs): SEZs are specially designated geographic areas set aside to house specifically targeted economic activities. Such zones are critical to the government’s objectives to advance industrialisation, rural development, job creation as well as to attract Foreign Direct Investment (FDI). SEZs include, amongst other things, free ports, free trade zones, industrial parks, science and industrial parks, sector development zones, spatial development corridors and industrial development zones. Special arrangements must be made for supporting infrastructure to support these developments. Transport network planning and transport services implementation should align and support these SEZs.
- Rural–urban migration and rural development: This trend is clearly indicated by the NATMAP 2050 demographic estimates and forecasts. Migration from rural areas has a significant impact on rural development and an equitable return on investment.
- Significance and role of cities: It is clear that metropolitan areas (core and semi-core) are dominant in spatial, population, economic and political terms. Investment in these urban areas needs to be balanced through investment in rural areas to ensure that the rural areas remain economically active and provide job opportunities to the population already living in these areas.
- Climate change – Climate change is generally considered a more serious threat in developed countries than it is in developing countries. This often results in development-driven decisions rather than environmentally sustainable ones. Spatial development plans at all levels need to factor in the sustainable use of resources, especially energy, and water.

This chapter has highlighted the important link between the location of the population in South Africa and that of economic opportunities, and the need for support by appropriate mobility and accessibility options and integrated multisectoral land use planning.

The difficulty in the fact that these plans are at different stages will be resolved over time as priorities become mature, but also through the NATMAP 2050 holistic approach in enabling alignment and integration, creating a multimodal and multisectoral planning environment that continues to evolve. The implication for the NATMAP 2050 within the spatial realm is, therefore, to ensure that transport plays a key role in strengthening the land use–transport relationship and in creating this enabling environment.