



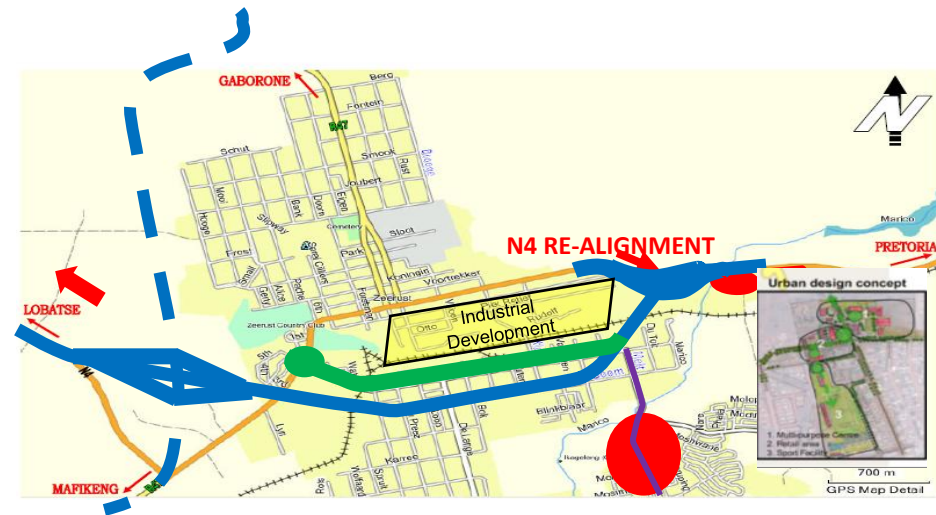
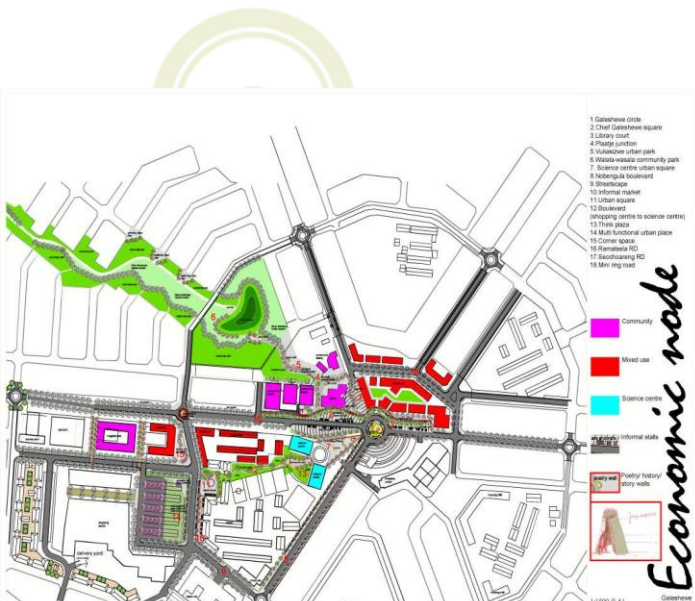
**RESTRUCTURING THE
TOWNSHIP PHYSICAL
ENVIRONMENT**

FOCUS OF THE MODULE

Because of the social, physical and spatial (locational) characteristics that prevent townships from developing from Module 2

Levels of intervention:

- Things that can be done **outside** the township to improve its locational advantages relative to the broader economic system



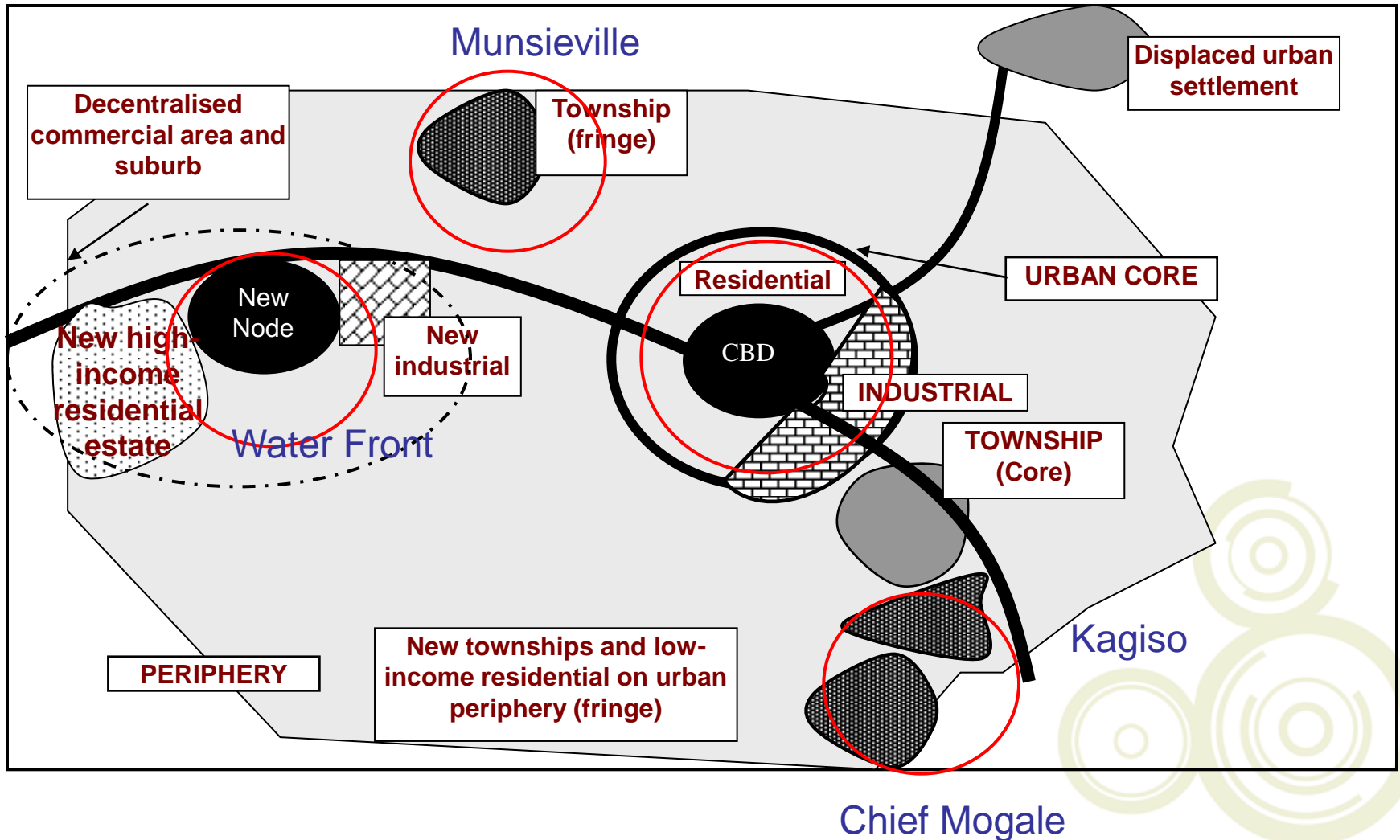
- Things that can be done **inside** the township to improve the economy of the township as a whole

SOUTH AFRICA'S URBAN SYSTEM

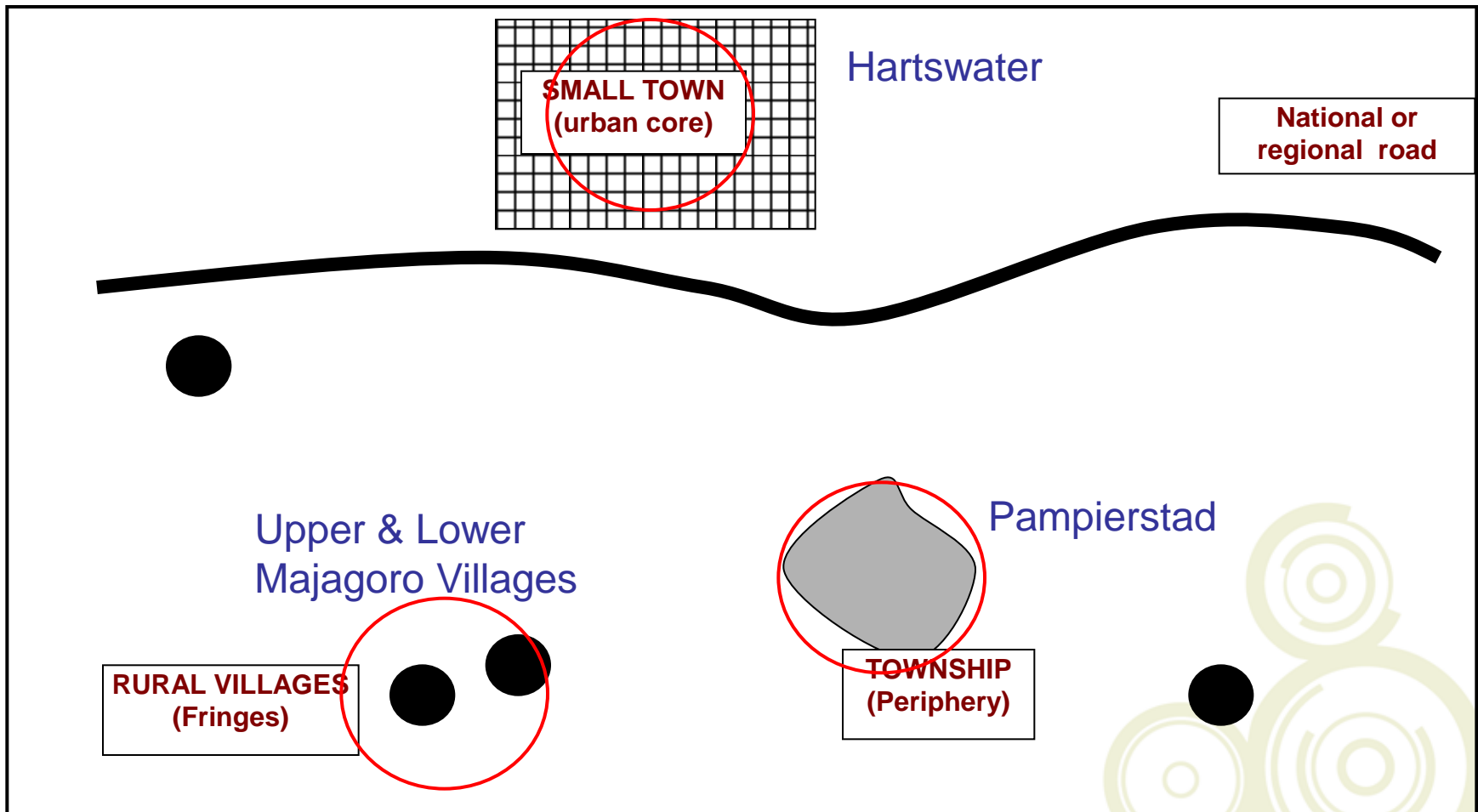
A typical city or town contains a mix of the following elements:

- Core and frame (fringe/periphery)
- Decentralised commercial centres and suburbs
- Industrial areas
- Upper- and middle-income residential neighbourhoods
- Declining residential neighbourhoods
- Townships and their post apartheid additions

Typical elements in a city context



Typical elements in a rural/small town context



IMPROVING SPATIAL ADVANTAGE

Typical characteristics:

1. Low density urban/rural sprawl
2. Fragmentation
3. Separation of land uses and income groups

CBD:

Mix of land uses, the focus of transport routes

Decline: moving to suburban nodes

Inner Suburbs:

Well located, upper income

Threat: redevelopment for offices

Suburban nodes:

Shopping and entertainment focused, low intensity development, private car oriented

Threat: hostile pedestrian environment, gridlock

Edge Suburbs:

Medium density, middle income, townshouses, groups housing, high income estates, private transport

Threats: Monofunctional higher density residential

Industrial and Office Parks:

Decentralised and accessible

Threat: dependant on private transport

Low-income townships and informal settlements

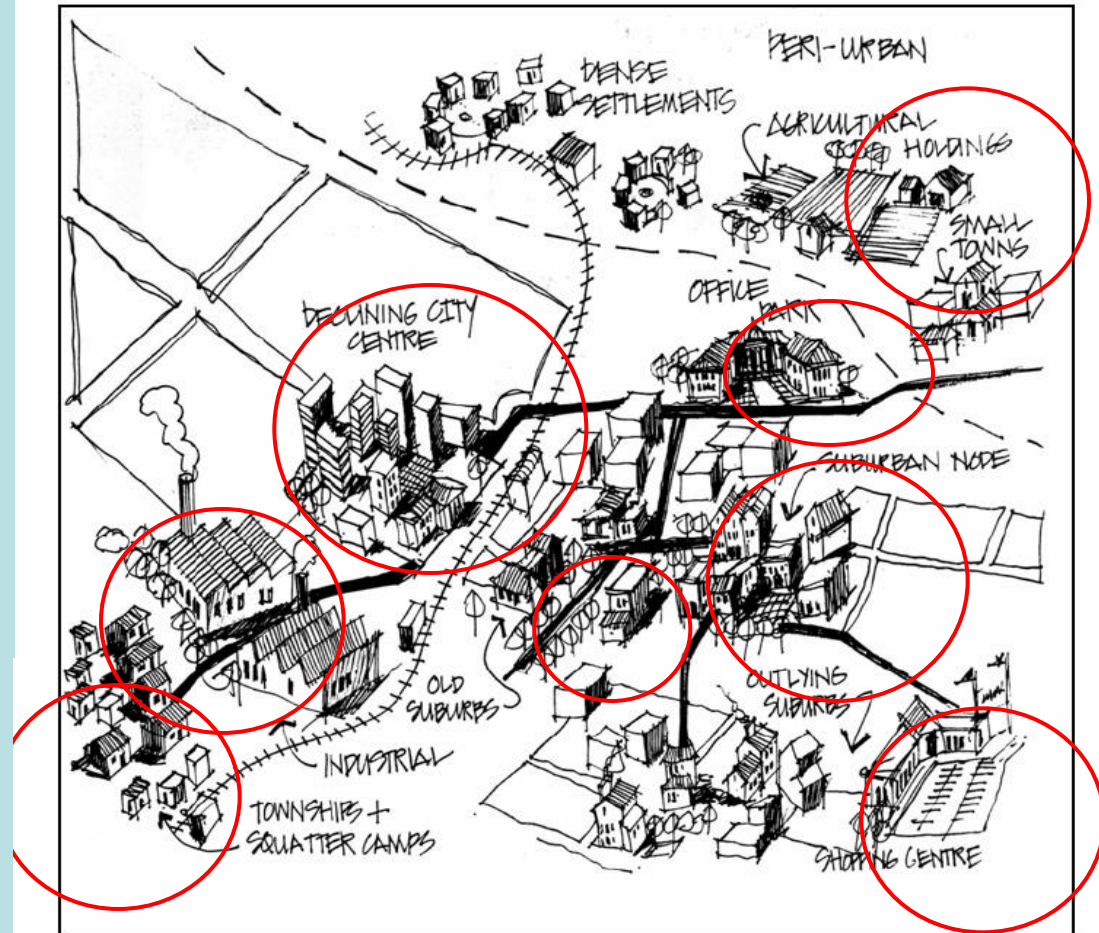
Dormitory towns, separated by buffer strips, railways lines, or industrial areas

Threats: overcrowding, insufficient services

Small Towns settlements

Dormitory towns, separated by buffer strips, agricultural areas

Threats: Migration, insufficient services



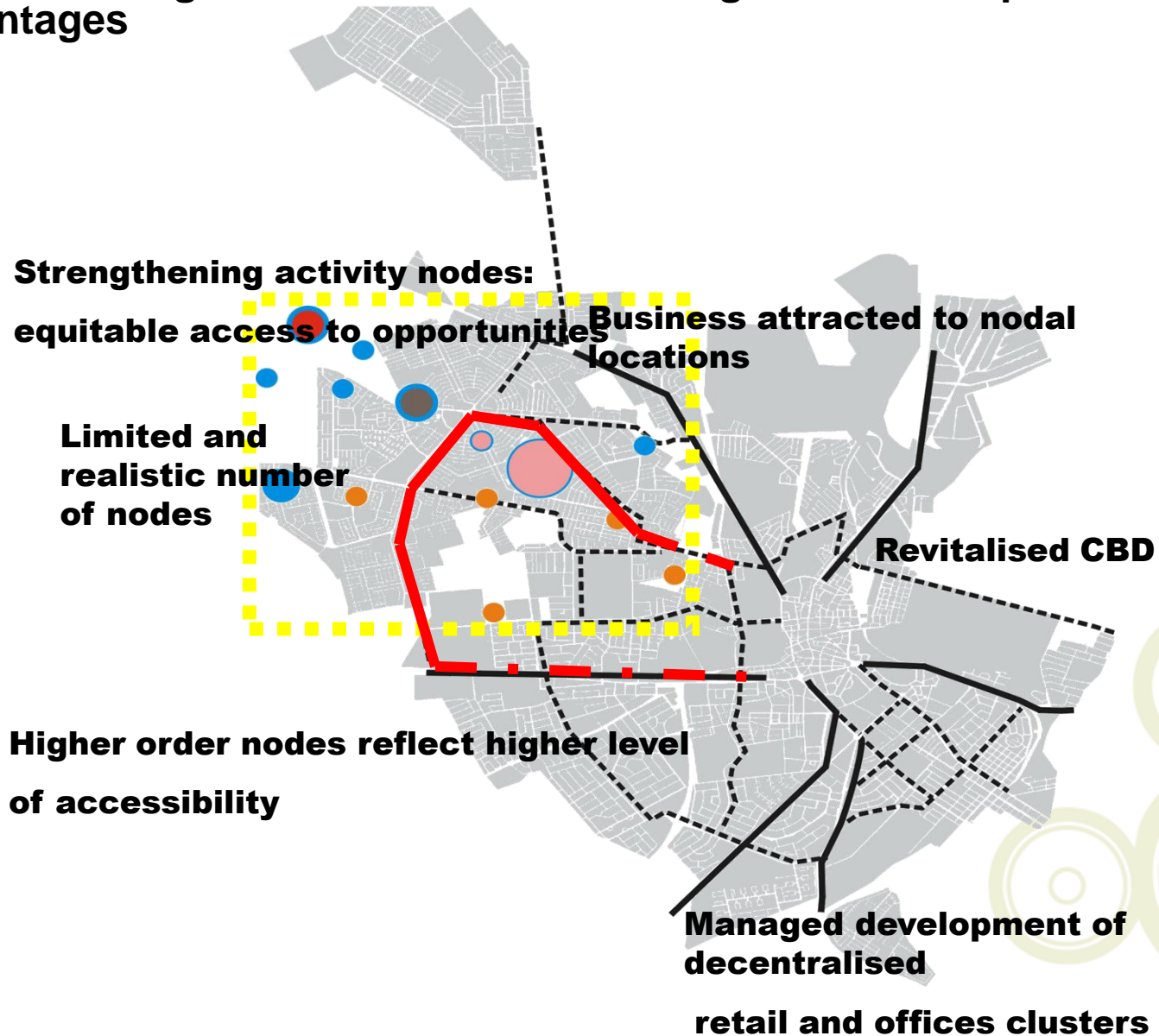
Strategies for improving spatial advantage

- Channel area growth into areas that strengthen township locational advantages
- Attract high-order facilities and activities into nodes adjacent to the township (e.g. Bridge City)
- Improve transport linkages

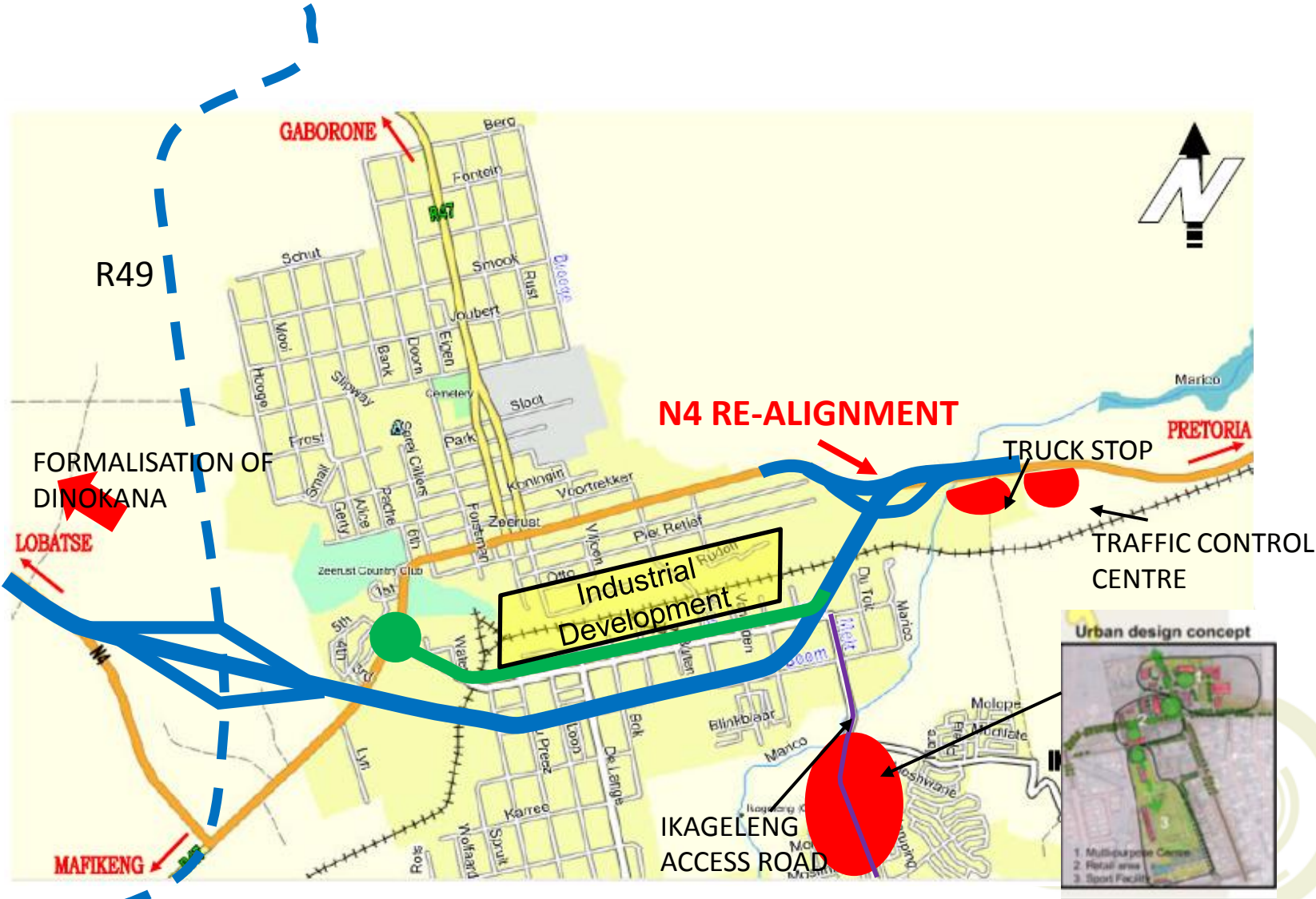


Strategies for improving spatial advantage

- Channel area growth into areas that strengthen township locational advantages

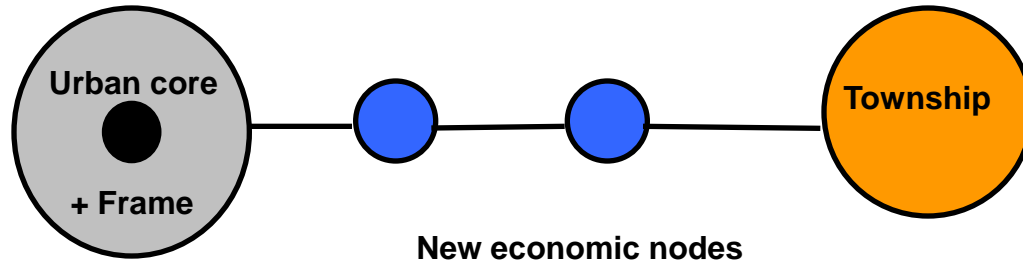


- Improve transport linkages

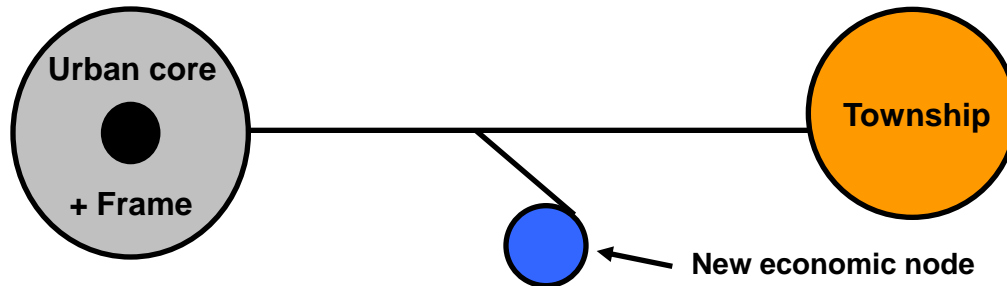


Strategies for improving spatial advantage

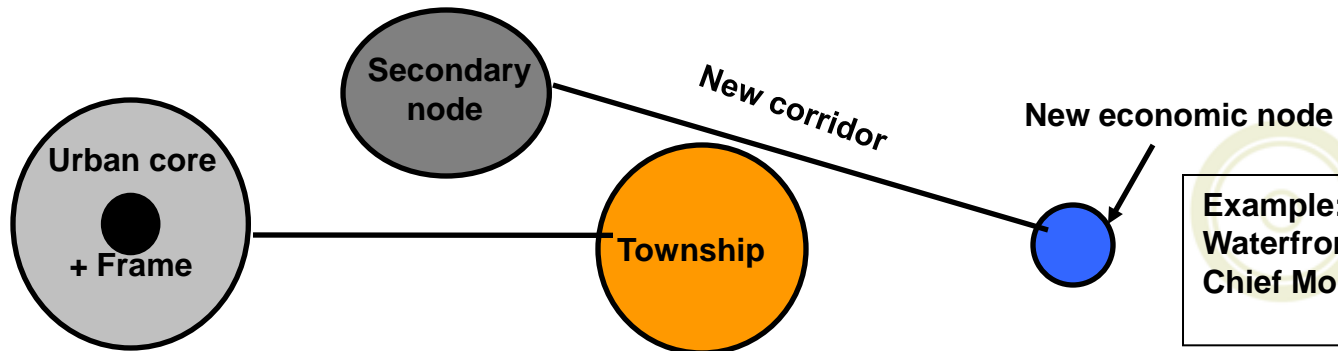
Urban growth channels



Examples: Kimberley CBD, North Cape Mall, Diamond Pavilion, Galeshewe



Examples: Krugersdorp CBD, Munsieville, Chief Mogale Dev



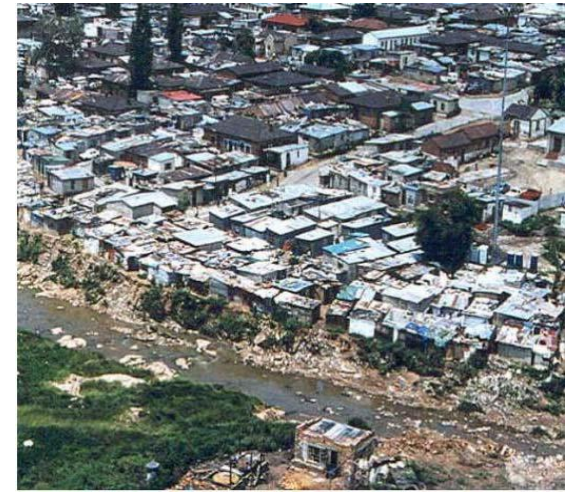
Example: Munsieville, Waterfront Dev & Chief Mogale Dev

IMPROVING THE BUILT ENVIRONMENT AND PUBLIC SPACES



Common problems

- Dispersed and restricted movement within the township
- Low-density built form and overcrowding
- Lack of range and quality of social facilities and public places
- Limited range of economic infrastructure and services
- Limited range of residential choice
- Insecure or unsafe spaces
- Lack of identity and 'sense of place'



Strategies for improving the built environment

Key objectives:

- Enhance ease of movement within a township and between a township and town
- Extend the mix and improve the concentration of land uses and activities
- Improve the capacity of the township land, infrastructure and buildings to adapt to different uses over time

Strategies:

1. Identify, plan and promote activity routes
2. Establish a hierarchy of nodes associated with activity routes
3. Improve the quality of public spaces
4. Promote residential infill
5. Crime prevention through environmental design



Strategy 1: Identify, plan and promote activity routes

Key objective:

- Integrate townships into the mainstream of area economies, to promote both access to the opportunities that exist in core areas and investment in townships

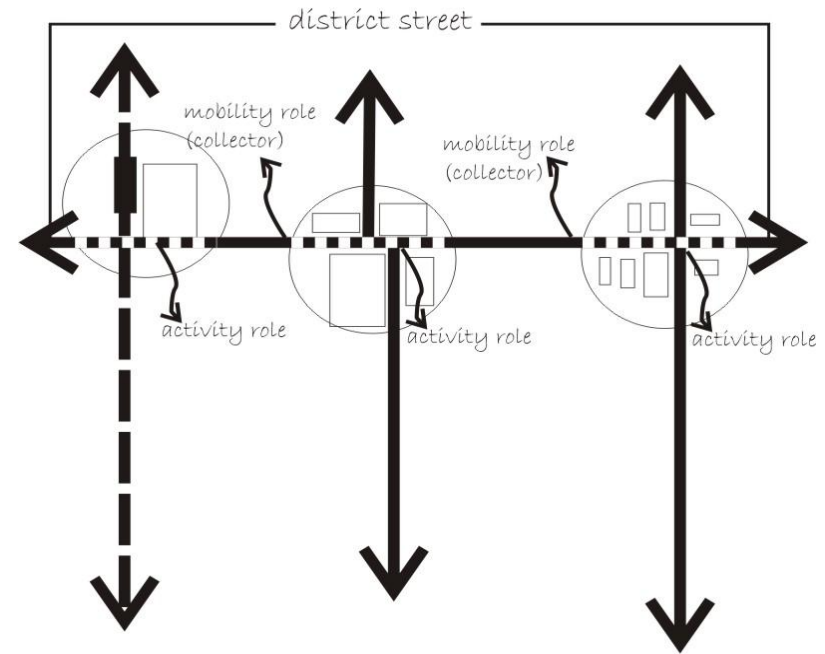
Public-sector interventions required:

- Rationalisation of road reserves
- Redesign of roads within the road reserves
- Landscaping and 'street furniture'
- Improving public transport along activity routes



Movement Hierarchy

- Competing activities: movement, access, urban activities
- Tool to match compatible land use with compatible access/movement requirements
- High order: heavy traffic flow, high design speeds, infrequent access spaces, no direct access
- Minor roads: light traffic flow, low design speeds, frequent access points, access to building frontage
- Role may vary along the route or at specific points

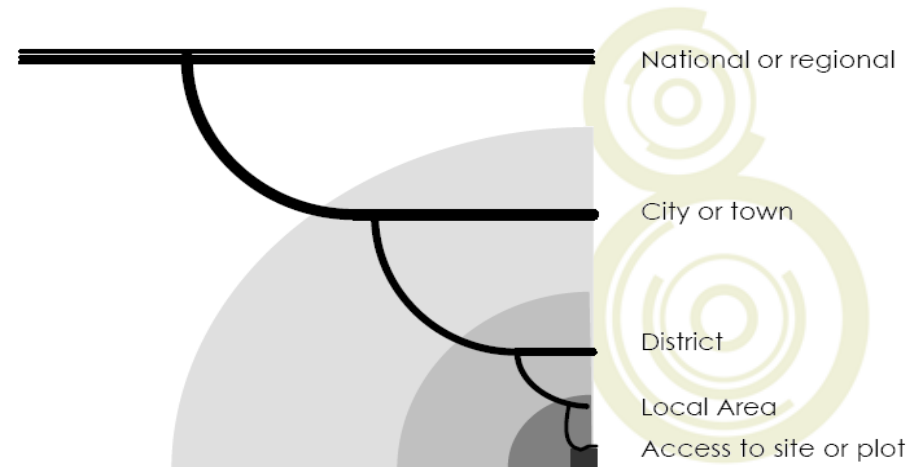


Mobility

- heavy traffic flow
- high design speeds
- increasing spacing standards
- no direct access

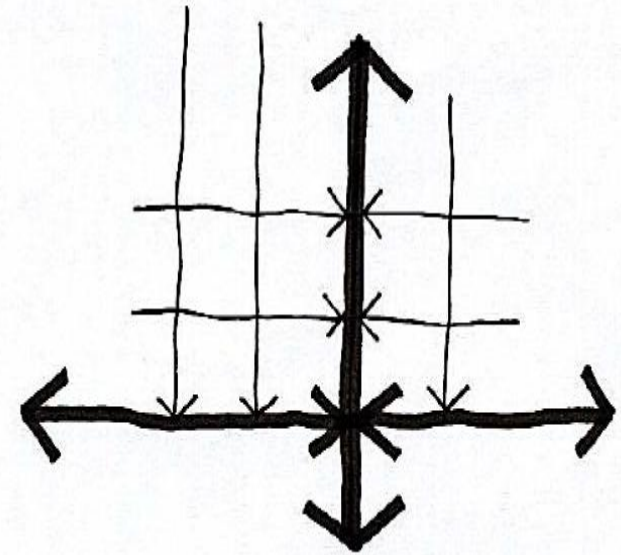
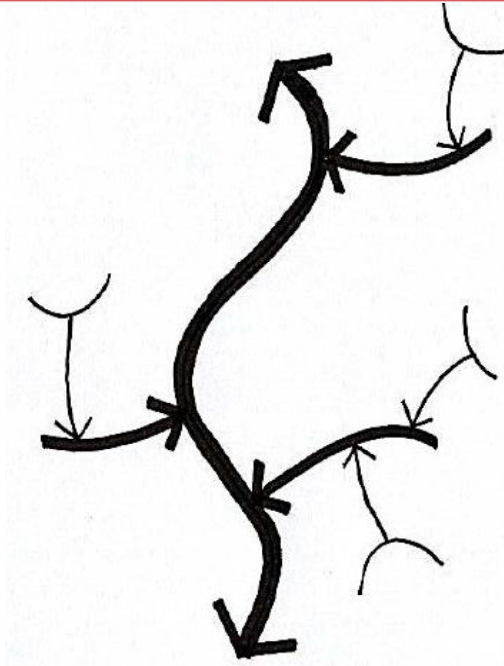
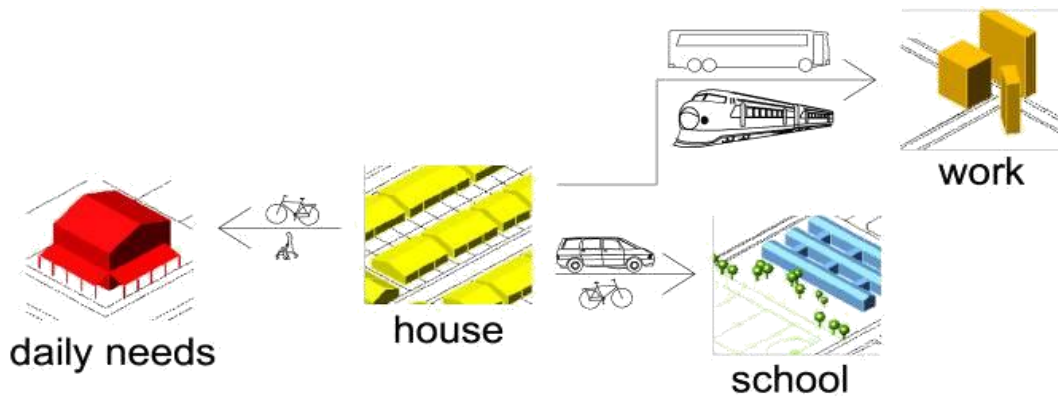
Access

- light traffic
- local routes
- low design speeds
- frequent access points
- access to building frontages

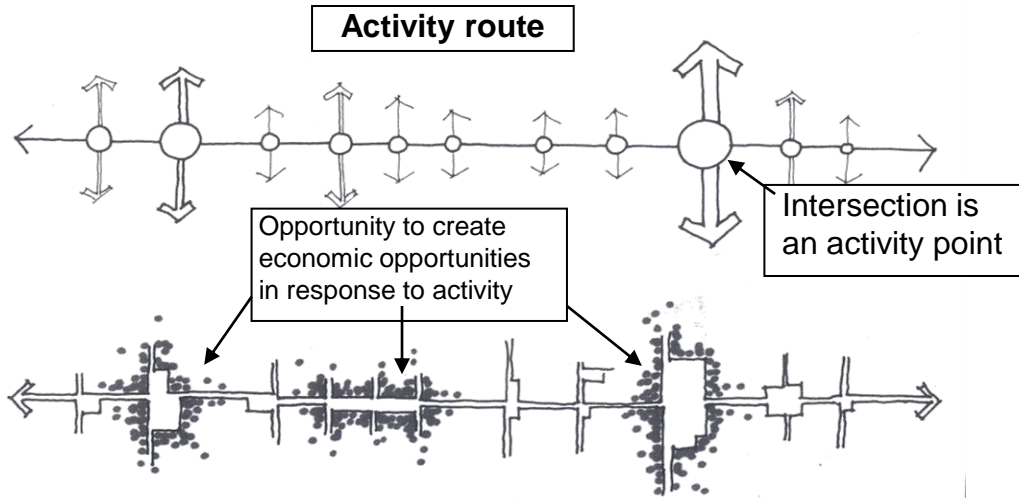


Movement

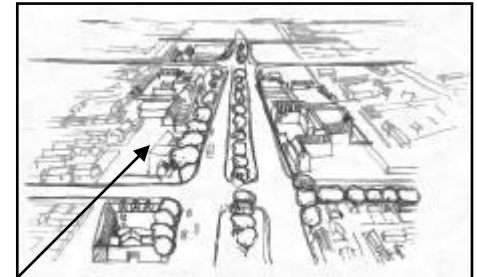
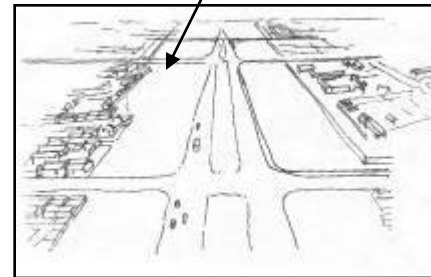
- **Typologies: neighbourhood model vs. grid model**
- **Street as multi-functional public space**
- **High order streets and appropriate land uses/ densities**



Activity routes



Road reserves are wasted space if not needed

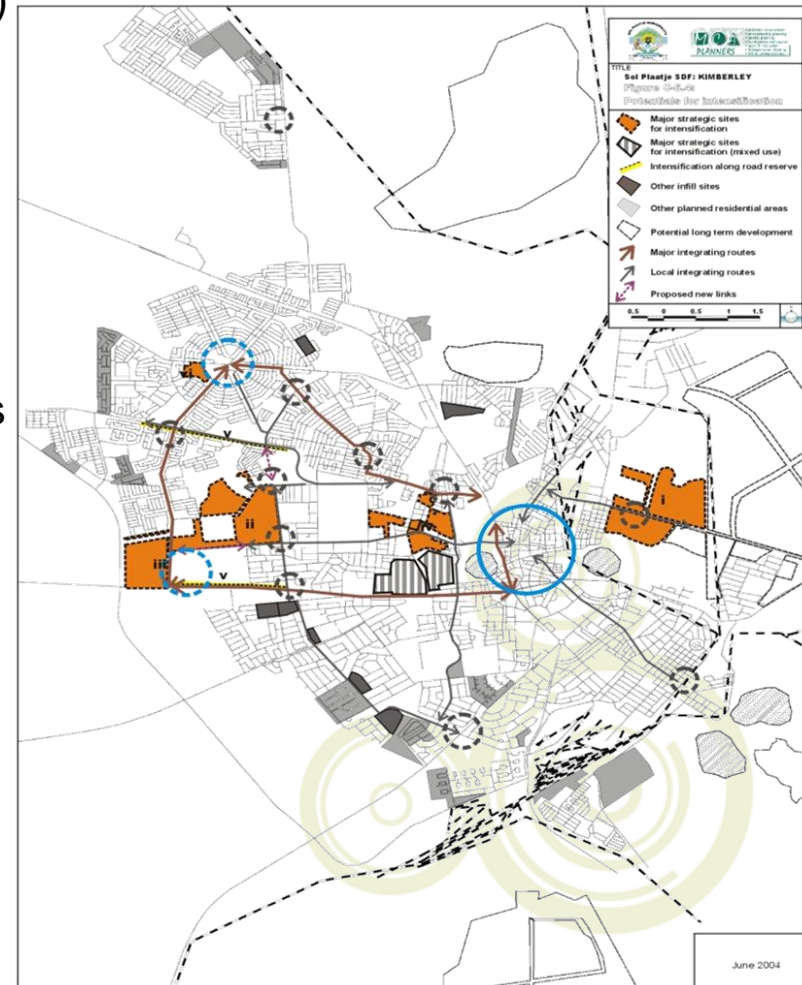
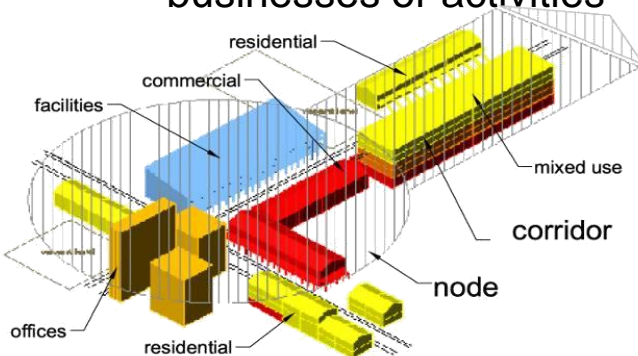
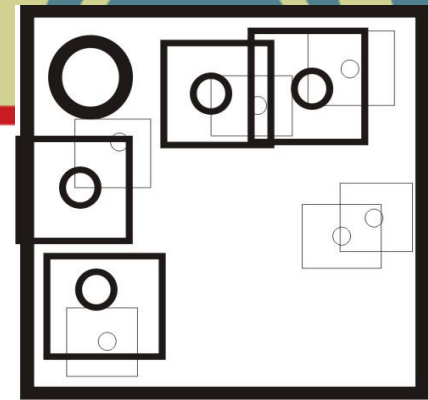


By using the wasted space for infill development (and calming traffic) development opportunities can be created

Strategy 2: Establish a hierarchy of nodes (associated with activity routes)

Features of urban nodes:

- A concentration of activities and land uses (commercial, housing, public space and facilities)
- Best located at points of the highest accessibility
- Should be well serviced by public transport and easy to get to
- The size of a node (planned or existing) depends on its location and accessibility
- The best locations are sought by high threshold businesses or activities



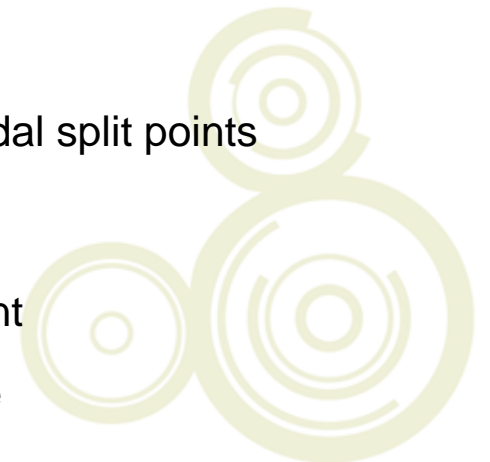
Strategy 2: Establish a hierarchy of nodes (cont...)

Key objectives:

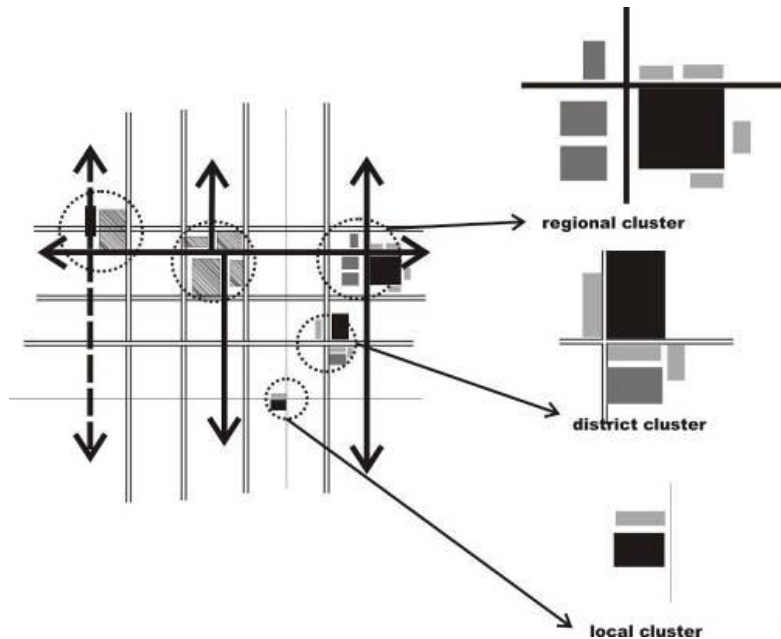
- Extend the range and quality of social facilities and public spaces
- Address problems of low-density built form and overcrowding
- Support development of economic infrastructure and services
- Contribute to safer public spaces
- Develop a 'sense of place'
- Encourage variety in built forms

Public-sector interventions required:

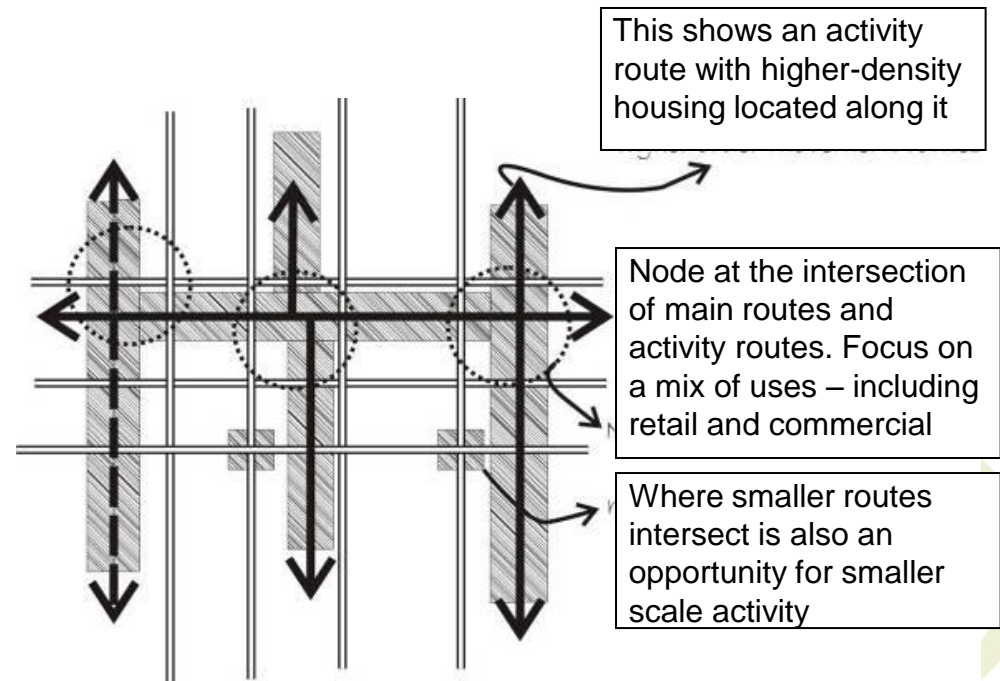
- Transportation-related interventions through the use of modal split points
- Clustering public facilities at activity nodes
- Reinforcing nodes with high-density residential development
- Reinforcing nodes with appropriate economic infrastructure



Clustering public facilities



Reinforcing nodes

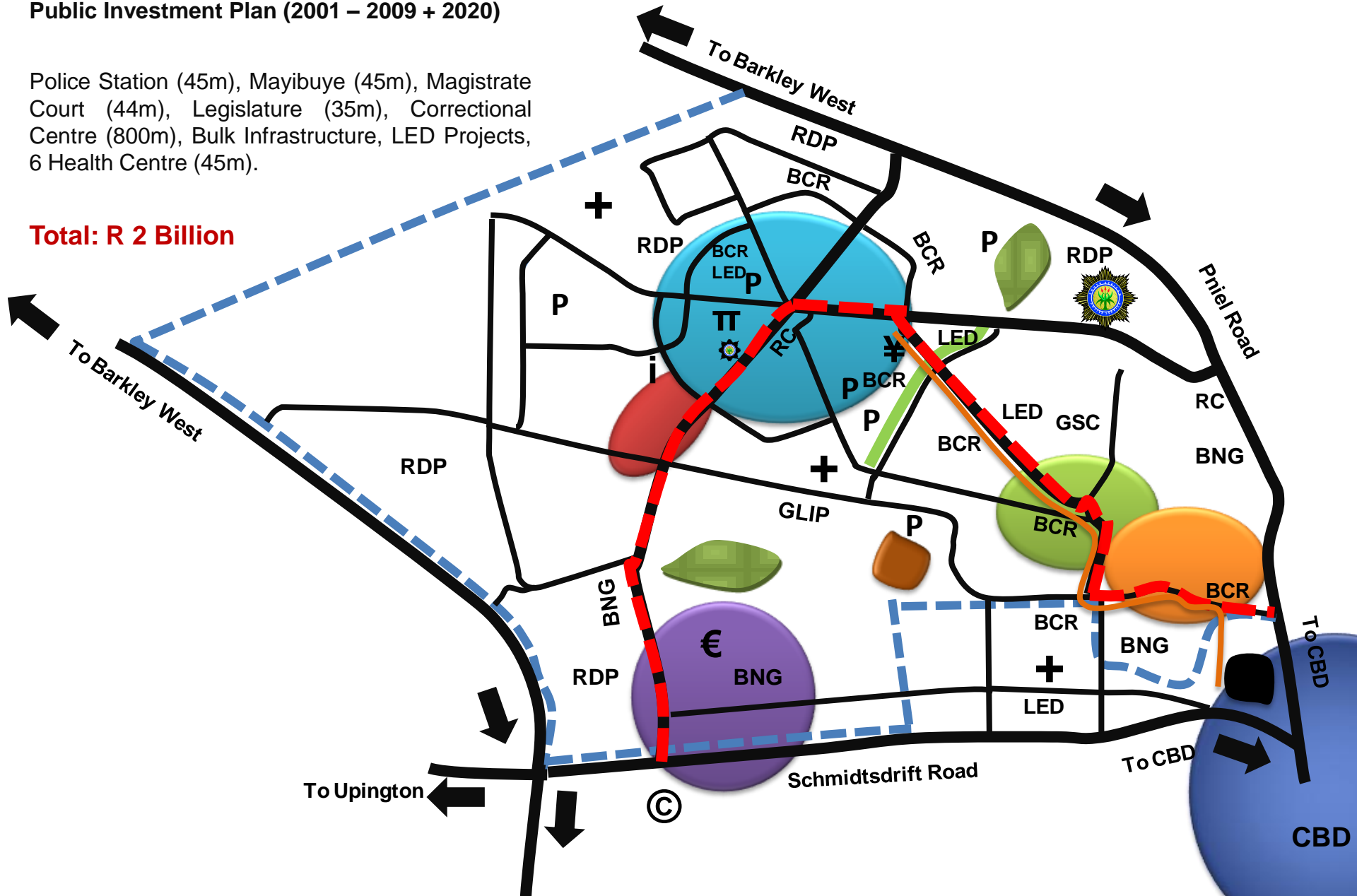


GALESHEWE (GURP) Redevelopment Project

Public Investment Plan (2001 – 2009 + 2020)

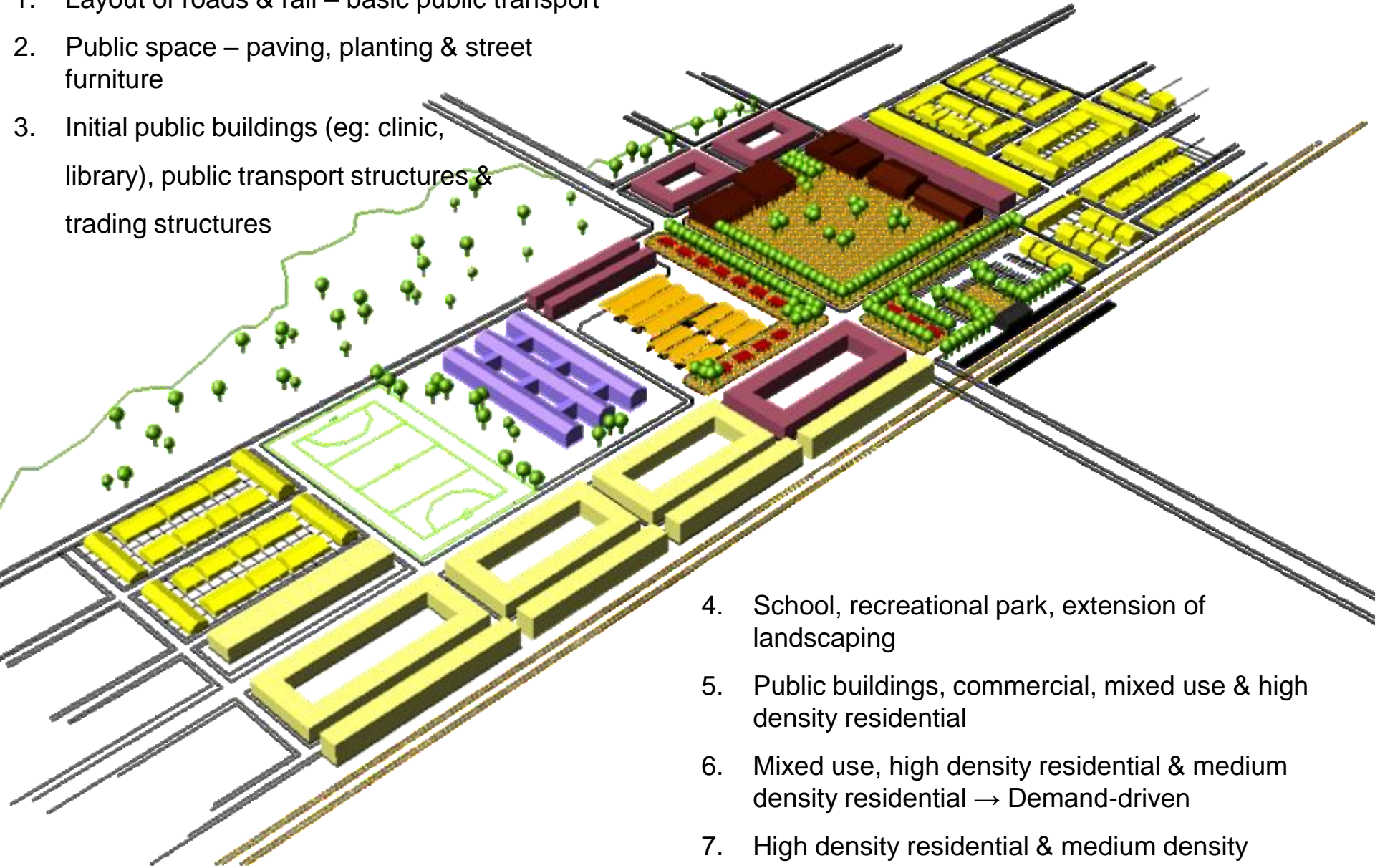
Police Station (45m), Mayibuye (45m), Magistrate Court (44m), Legislature (35m), Correctional Centre (800m), Bulk Infrastructure, LED Projects, 6 Health Centre (45m).

Total: R 2 Billion



Conceptual Nodal Development

1. Layout of roads & rail – basic public transport
2. Public space – paving, planting & street furniture
3. Initial public buildings (eg: clinic, library), public transport structures & trading structures

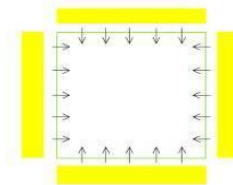


4. School, recreational park, extension of landscaping
5. Public buildings, commercial, mixed use & high density residential
6. Mixed use, high density residential & medium density residential → Demand-driven
7. High density residential & medium density residential

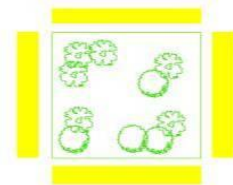
Strategy 3: Improve the quality of public spaces

Common problems:

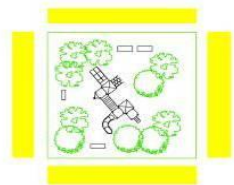
- Lack of meaningful investment of new public open spaces
- Inadequate maintenance of existing open spaces



surveillance



trees



furniture

Key objective:

- Urban public spaces (streets, squares, promenades and green spaces) should act as an extension of the housing unit, providing space for social and economic activities

Public-sector interventions required:

- Establish an integrated open space system
- Establish a hierarchy of public spaces
- Ensure that key design principles of scale and enclosure are applied



Public Spaces (Promote Dignified Spaces)

- **Hard open space**

- Squares,
- markets,
- public transport interchanges,
- Streets



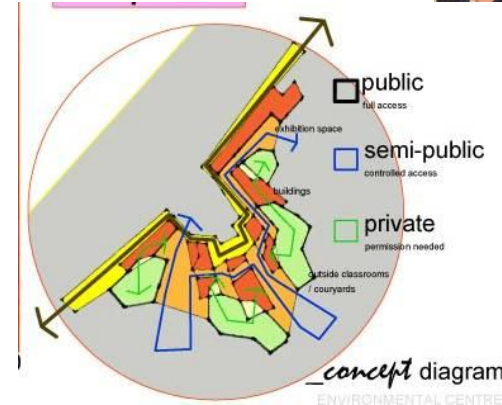
- **Soft open space**

- Parks



- **Urban design elements that can be used in conjunction with public space to define/enclose the space:**

- Collonades
- Surfacing and Paving
- Strategic and high quality planting
- Low walls and seating

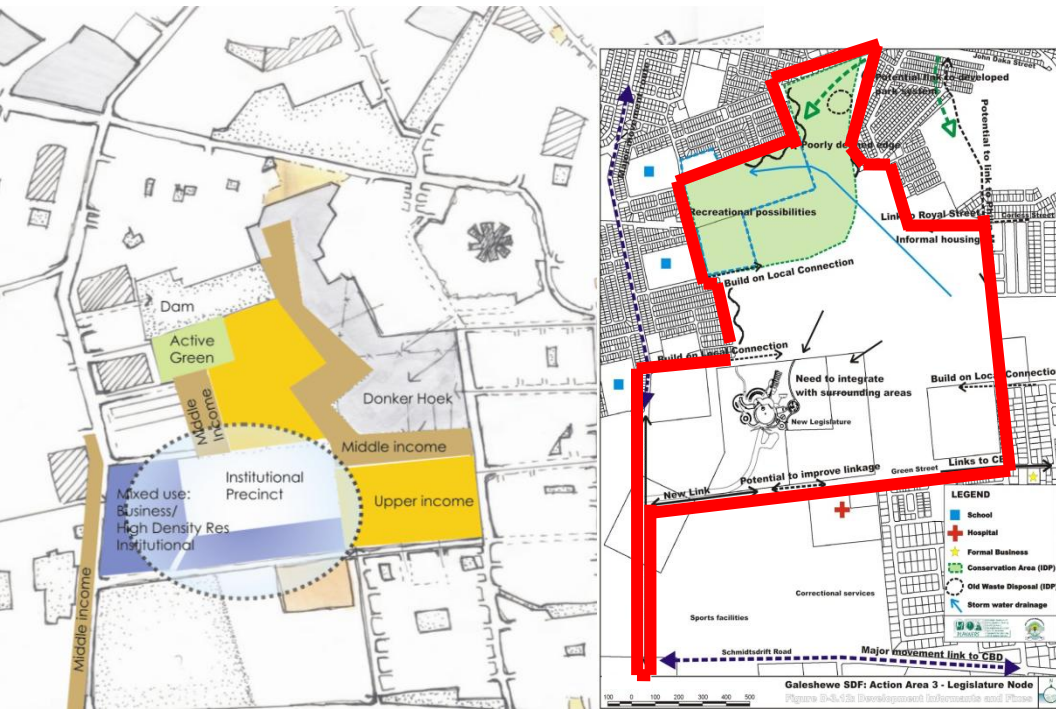


When public spaces are good, they improve the enjoyment of activities (quality of life) and give confidence (economic/investment) and a sense of permanence to a place.

Strategy 4: Promote residential & land infill

Key objectives:

- Attract and retain middle- and upper-income residents in townships by providing quality and variety of housing
- Create property investment opportunities within the township for residents and entrepreneurs
- Promote community safety by eliminating dead space and promoting surveillance



Improve thresholds for economic and social services

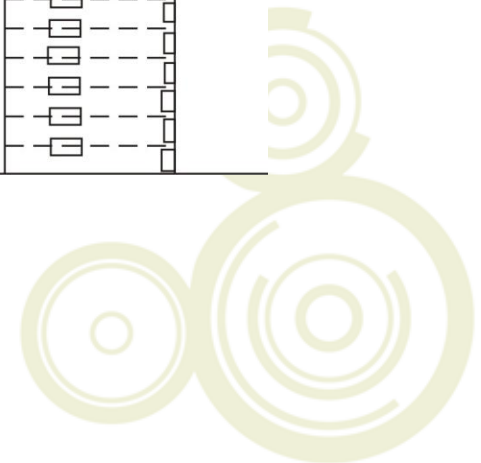
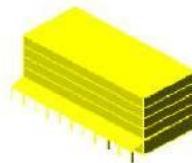
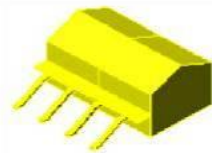
Public-sector interventions required:

- Provide a range of housing types
- Release land for development by the private-sector

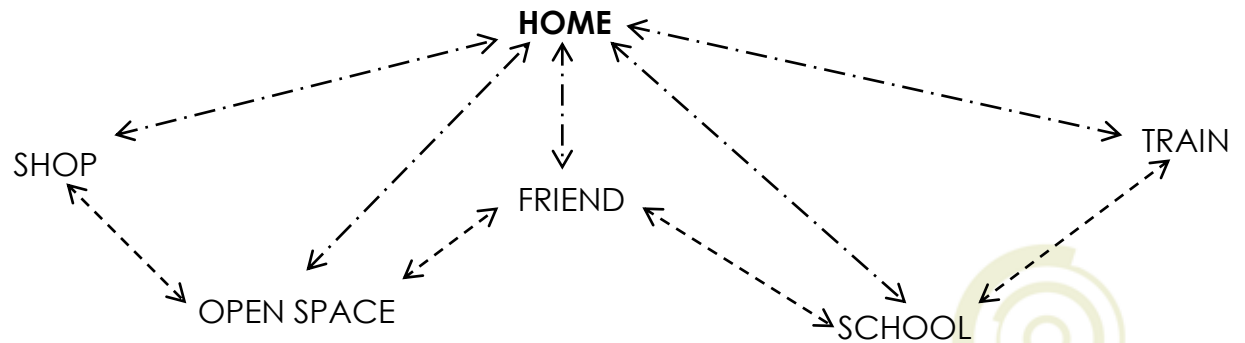
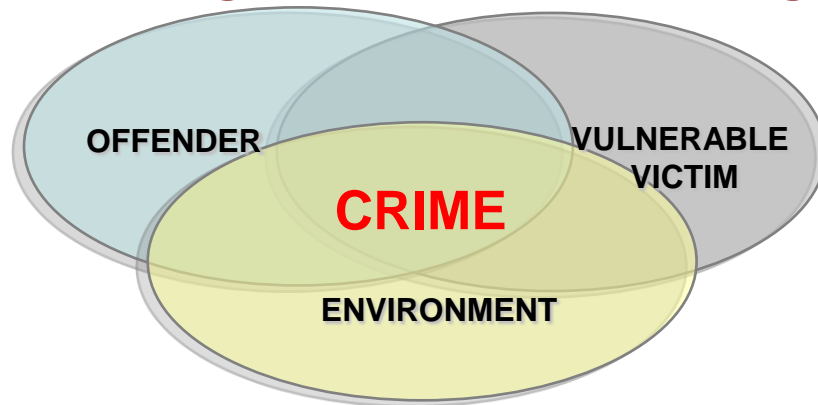


House – form / typologies

- **Incremental housing**
- **Single dwelling**
- **Second dwelling**
- **Semi-detached**
- **Tenement housing**
- **Row house**
- **3 or 4 storey walk-up**
- **Multi-storey**



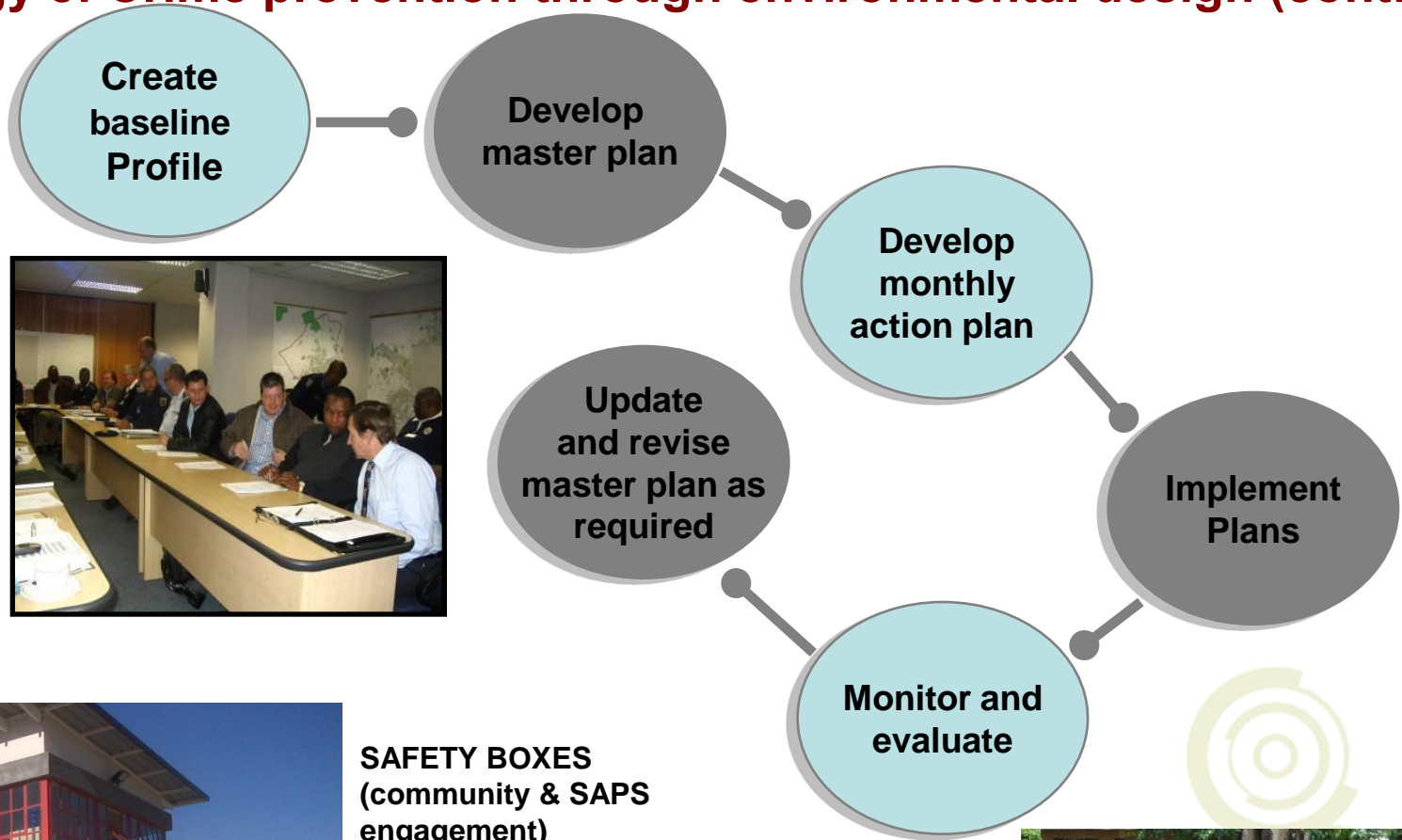
Strategy 5: Crime prevention through environmental design



Poor Urban Management	Environmental Contributors to Disorderliness	By-law Infringements & Non-serious crimes	Serious Crimes
Temporary failures – serious infrastructure and services breakdowns	Environmental Neglect – Tampering and Vandalism	Willful infringements and commitment of non-serious crimes	Vehicular - Property – personal crimes



Strategy 5: Crime prevention through environmental design (cont...)







SAFETY BOXES
(community & SAPS
engagement)

SOCIAL CRIME PREVENTION
(through community engagement)



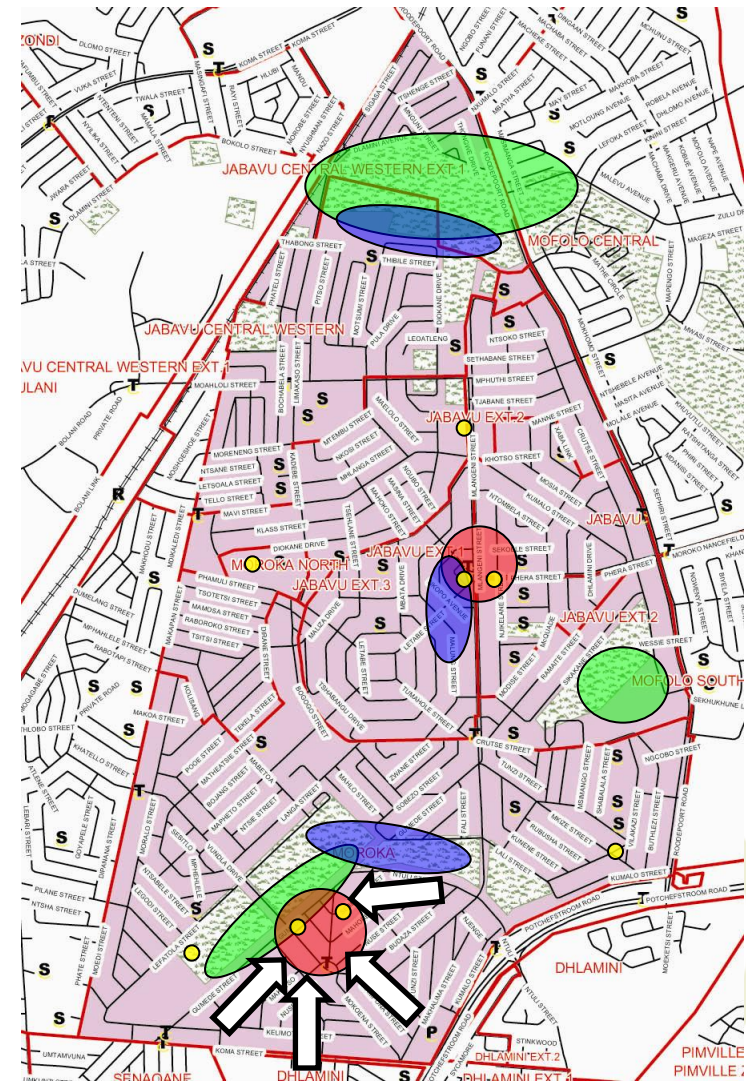
Strategy 5: Crime prevention through environmental design (conti...)

Address all underlying factors that create an environment conducive to crime

- Crime “hot spots” 
- By-law infringement hot spots (illegal street trading, illegal dumping ...) 
- Service delivery issues (long grass, street lighting ...) 
- Other possible contributing factors to an unsafe environment (“bad” buildings, liquor outlets ...) 

Application

- Diagnostics
- Prioritisation of issues
- Planning
 - Interventions
 - Resource allocation
- Monitoring
- Evaluation
- Knowledge management



Strategy 5: Crime prevention through environmental design (conti...)

Key objectives:

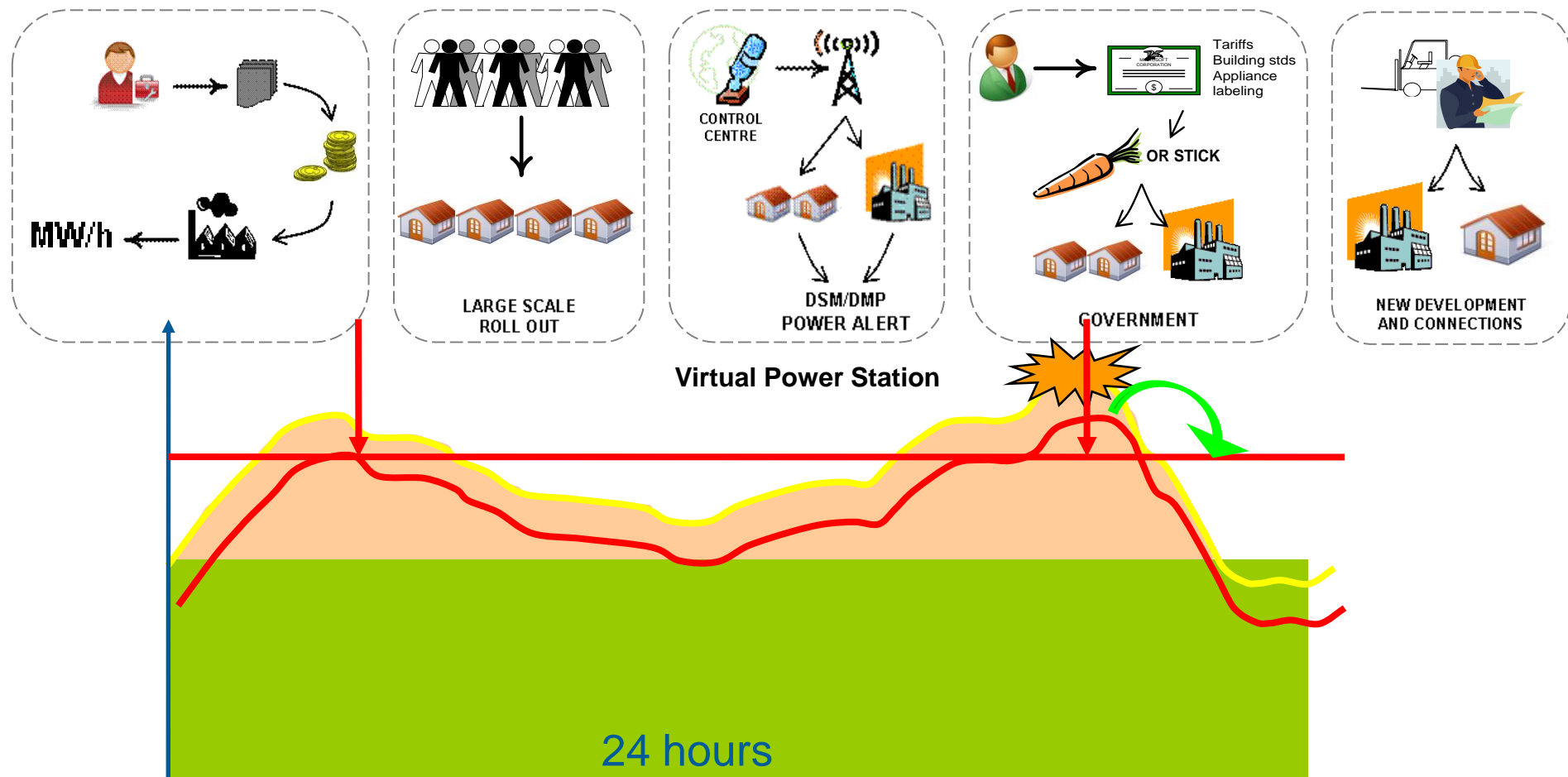
- Design of places and spaces to maximise surveillance
- Redevelopment of unused open spaces with housing and other facilities which enable active use throughout the day
- Maintaining public spaces to create a sense of pride and ownership (e.g. ensuring weeds and rubble are cleared)
- Demolishing or re-using vacant and abandoned facilities

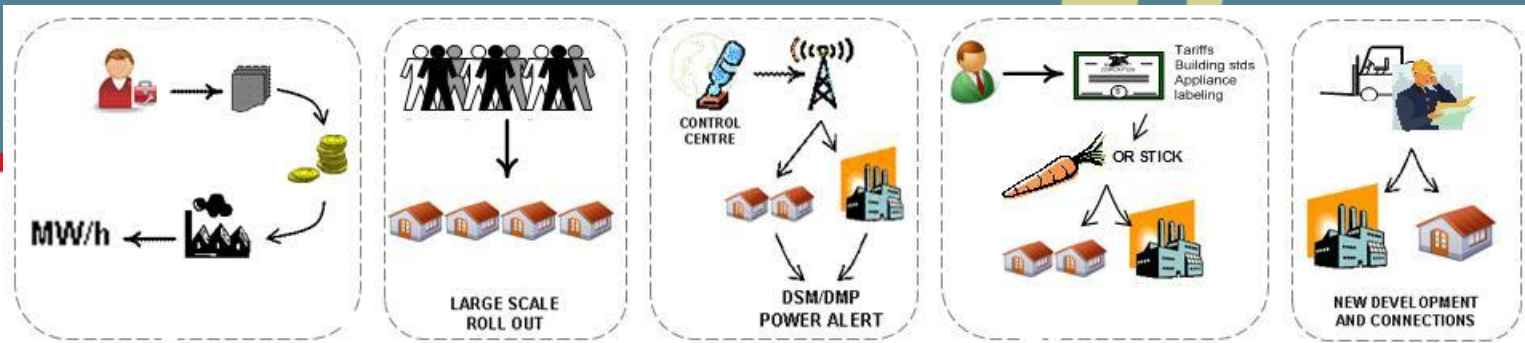
Public-sector interventions required:

- Urban design interventions that promote passive surveillance
- Promote functional or used spaces - vacant or underutilised space should be eliminated
- Install lighting to reduce opportunities for crime
- Promote pedestrian-friendly neighbourhoods



Comprehensive Energy Efficiency Programme





Generate Energy from Renewable Energy Sources

- Solar
- Wind
- Wave
- Biomass

And
Expand energy storage capacity

Enhance Energy efficiency

- Introduce sustainable energy strategies
- Reduce energy and operational costs
- Retrofit and refurbish buildings

Promote low and zero carbon development

- Low carbon cities
- Sustainable transport
- Emission reduction strategies
- Conserve natural resources
- Reduce negative impact on environment

Supported by

Innovative financing mechanisms, incentives, and policy reforms

- Feed-in tariffs
- Green Technologies
- By-Laws
- Taxes and Subsidies

CONCLUSION

- The broad principles discussed in this module would apply to a township in a large metropolitan area as well as a township in a rural location. The nature and scale of the interventions would change, but not the underlying principles.
- There are no quick fixes. Change in the built environment takes time. Urban development practitioners must be patient. In this context, a clear and well motivated development framework can act as a guide over time to ensure that decisions continue to reinforce earlier development directions.