cogta

Ministry:
Cooperative Governance and Traditional Affairs
PROVINCE OF KWAZULU-NATAL

SUPPORT THE PROVINCIAL STEERING COMMITTEE ON THE DRAFTING OF PLANNING AND DEVELOPMENT NORMS AND STANDARDS ON CLIMATE CHANGE AND ENERGY EFFICIENCY IN LAND USE MANAGEMENT

DQP 63/2017 LG

SPLUMA Presentation

16 November 2018

urbanEARTH

The Planning Initiative

Purpose of the presentation

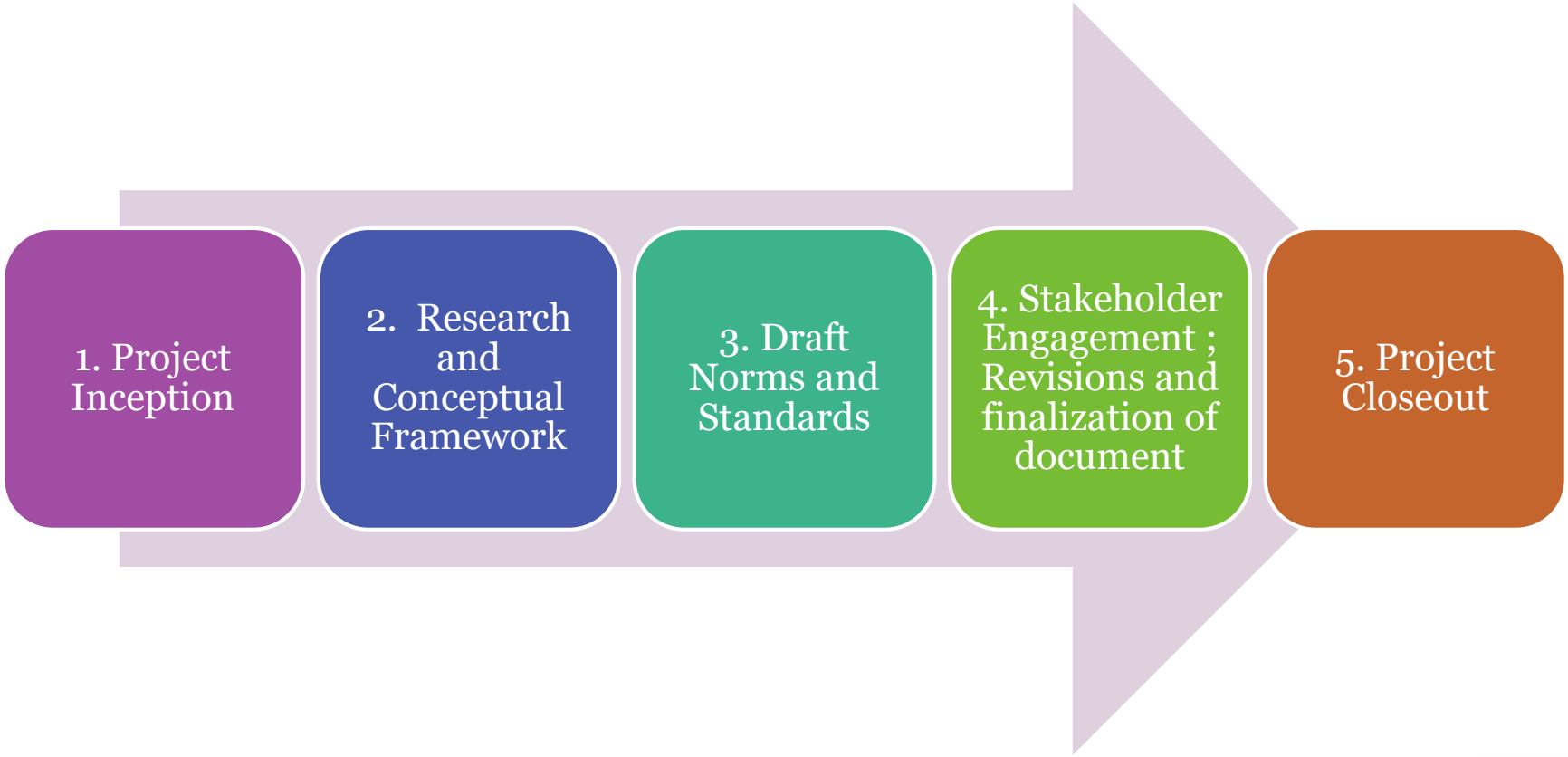
- To inform the participants of the draft Planning and Development Norms and Standards on Climate Change and Energy Efficiency in Land Use Management 2018

- Please submit comments by 7 December 2018 to Melissa.Pillay@kzncogta.gov.za and The Planning Initiative tpi-dck@mweb.co.za

- People can also source the document from the COGTA website: municipalities – norms and standards http://www.kzncogta.gov.za/norms-and-standards/

Background to the Project

Project Programme



The Legal Requirement for Planning Norms and Standards

- Section 8 of the Spatial Planning and Land Use Management Act, Act No. 16 of 2013 also requires the preparation of Norms and Standards
- Chapter 11 of the KwaZulu-Natal Planning and Development Act, Act No. 6 of 2008 (PDA) requires that the Province of KwaZulu-Natal draft Planning and Development Norms and Standards on various themes

Purpose of the Norms and Standards: Climate Change and Energy Efficiency

- To provide Municipal Planning Officials and Municipal Planning Tribunal (MPT) members with a set of norms and standards that focus on climate change and energy efficiency
- These should be used in the preparation of plans and the assessment of all land development applications.
- To act as a minimum baseline that can be applied across the Province. Municipalities are welcome to prepare more detailed standards if they wish.

Target Audience – PDA 136 (1)

1. *Municipalities,*
2. *the Appeal Tribunal and*
3. *any other organ of state*

on which the power has been conferred to consider

- *applications for the amendment of schemes,*
- *the subdivision and consolidation of land,*
- *the development of land outside the area of a scheme,*
- *the phasing or cancellation of an approved layout or*
- *the alteration, suspension or deletion of restrictions relating to land*

Legal Effect

Once these Norms and Standards have been promulgated, Section 136.(1) states that **Municipalities, the Appeal Tribunal and any other organ of state** on which the power has been conferred to consider

- applications for the amendment of schemes,
- the subdivision and consolidation of land,
- the development of land outside the area of a scheme,
- the phasing or cancellation of an approved layout or the alteration,
- suspension or deletion of restrictions relating to land

must consider provincial planning and development norms and standards that have been promulgated by the responsible Member of the Executive Council as contemplated in section 144(2) when deciding in terms of the Act or any other law.

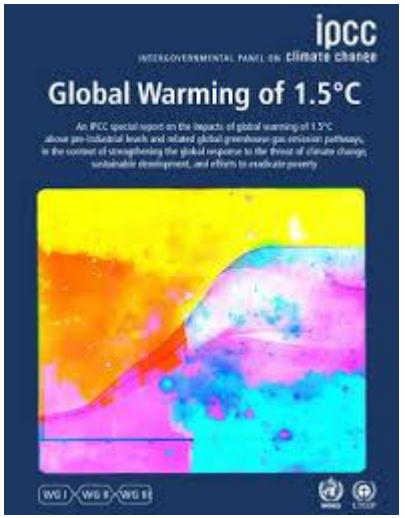
Climate Change and Energy Efficiency – Why is this important for Planners?

Why is Climate Change and Energy Efficiency important

IPCC
INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

WMO UNEP

- UN Intergovernmental Panel on Climate Change has just released a landmark report – we only have 12 years to limit global warming to 1,5° C. If we do not achieve this, even half a degree increase in temperature to 2° C will worsen the risks of drought, floods, extreme heat and poverty.
- At the moment we are on a course for a disastrous 3° C increase in temperature



Impacts of a 2° C increase in temperature instead of 1,5° C

- Water stress - 50% higher
- Food scarcity, climate related poverty and climate driven refugees will increase
- Increased temperatures – heat related deaths, fires
- Extreme rainfall - 30% higher than today and 15% higher than with a 1,5 °C increase.
- Sea level rise will affect 2 million more people
- Habitat loss will double
- Marine fisheries could loose an additional 2 million tonnes of fish
- At 1.5°C about 80% of the world's coral reefs will be destroyed. At 2°C they will all be wiped out.
- Increased financial cost: the annual flood damage from sea level rise is estimated to be $10.2-trillion at 1.5°C, compared to $11.7-trillion at 2°C.

i.e. Enormous benefits of keeping the temperature increase to a 1,5° C . We need a radical shift in energy and transport and planners have an important role to play in achieving this

Some impacts are inevitable/ already happening and we need to start preparing and planning for these.

Responses to Climate change

Responding to climate change:

- Ways to reduce the amount of GHGs in the atmosphere (climate change mitigation) and
- Ways to adapt to the impacts of inevitable climate change (climate change adaptation).

- Mitigation:
  - Using less energy to produce the same outcome and using renewable energy sources
  - Energy Efficiency is the “least cost” mitigation option.
  - Thus a core focus on the national climate change mitigation response by DEA
- Adaptation:
  - Key sectors: water, agriculture and forestry, health, biodiversity and human settlements

Planning

- Include climate change mitigation and adaptation, and energy efficiency as part of the vision and objectives of the IDP and SDF
- Spatial form significantly affects the use of energy – amount of transport needed; amount of heating and cooling required

An often cited example of urban sprawl is Atlanta, GA (US), which has a similar population as Barcelona but occupies an urban area that is 26 times as large.

Location	Atlanta	Barcelona
Urban Population (million inhabitants)	2.5	2.8
Urban Area (km²)	4,280	162
Urban Density (pph)	6	173
Energy Consumption Per Capita for Private Transportation (MJoules)	80	9

Source: Bertaud and Poole 2007

Planning Energy Efficient and Livable Cities, Energy Efficient Cities, Mayoral Guidance Note #6, Energy Sector Management Assistance Program, Knowledge Series 022/14; www.esmap.org/Energy_Efficient_Cities.

The Draft Guideline Document

Structure of the Document

- Executive Summary
- Definitions

BACKGROUND, OBJECTIVES, LEGAL EFFECT

- 1 Introduction sets out the legislative requirement for the norms and standards.
- 2 sets out the **purpose** of the norms and standards, the approach to preparing the norms and standards, and an outline of the document.
- 3 sets out the **background to climate change and energy efficiency and the need** for the preparation of norms and standards for these topics within land use management systems.
- 4 establishes the target audience for the norms and standards.
- 5 sets out the objectives of the norms and standards.
- 6 establishes the legal effect of the norms and standards in terms of SPLUMA and the PDA.
- 7 summarises the legal framework for climate change, energy efficiency and land use management.

CLIMATE CHANGE

- 8 focuses on the norms and standards for climate change

ENERGY EFFICIENCY

- 9 focuses on the norms and standards for energy efficiency

HOUSEKEEPING

- 10 notes when the norms and standards commence or take effect
- 11 indicates whether there are other related norms and standards
- 12 notes where copies of the norms and standards may be obtained
- 13 lists related documents that may be of assistance

Key Issues Addressed

- Climate Change: three key risks are addressed in the norms and standards:
  - Increased flooding
  - Increased impacts on coastal environment
  - Increased impacts on human health

- Energy Efficiency two key areas are addressed in the norms and standards:
  - Planning for an Energy Efficient Spatial Form
  - Renewable Energy Technologies

Objectives

To provide a set of norms and standards

- Which promote the five spatial principles as set out in SPLUMA (Annexure 2):
  - Principle of spatial justice
  - Principle of spatial sustainability
  - Principle of efficiency
  - Principle of spatial resilience
  - Principle of good administration
- Which work towards ensuring that climate change and energy efficient considerations and responses are incorporated into land use management in KwaZulu-Natal
- Which contribute to the mitigation of climate change by reducing greenhouse gases
- That facilitate the fitting of compliant renewable energy installations
- That avoid or minimise and appropriately mitigate the potential impact that may arise from the installation of renewable energy structures.
- Which assist in co-ordination between different spheres of government to achieve this.

Draft Norms and Standards: Climate Change

Draft Norms and Standards: Flooding

- Already existing policies and guidelines to help developers prepare for flooding
  - National Water Act requires 100-year flood lines
  - The CSIR Red Book - *Guidelines for the provision of Engineering Services and Amenities in Residential Township Development Volume 2*
- Climate models show increased likelihood of intense rainfall events
  - Increased local erosion and flooding
  - Increased runoff into stormwater management systems that are already under strain.

Draft Norms and Standards: Flooding

- Objectives
  - To respond to more **frequent** & more **intense** flooding events
  - To ensures runoff is not in excess of what would happen in unmodified state
  - To promote the use of source and local control Sustainable Drainage Systems (SuDS)

Draft Norms and Standards: Flooding

- Preparing Flood Lines
  - 1:50 year and 1:100 year
- Managing Major Storm Risk
  - Provide a storm water management plan
- Incorporating Sustainable Drainage Systems
  - Source control (e.g. Porous surfaces, Green roofing systems, Water harvesting systems)
  - Local control (Filter strips, Swales, Infiltration trenches, Bio-retention, Sand filters)

SuDS Examples

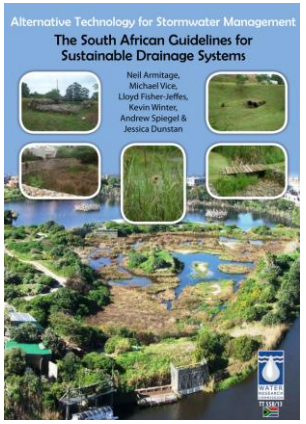
Vegetated filter strips adjoining a meandering stream

Roadside swale, Cotswold Downs Golf Estate, Hillcrest

eThekwini Green Roof Pilot Project, Durban CBD

Bio-retention area, Evergreen Retirement Village, Cape Town

Modular pavement system planted with grass, Clifton Hill Estate, Hillcrest



Images from: (Armitage, South Africa, and Water Research Commission 2013

Draft Norms and Standards: Coastal Impacts

- Climate models show increased likelihood of impacts of increased coastal storms and sea level rise
- NEMA requires preparation of Municipal Coastal Management Programmes
- Integrated Coastal Management Act (ICMA) requires
  - Coastal Protection Zone (CPZ)
    - 100m from the high watermark in urban areas & 1000m in rural areas.
  - Coastal management lines
    - Coastal erosion line,
    - Development setback line and/or building height

KwaZulu-Natal has the highest rate of sea-level rise in the country, rising by +2.74mm per year, and together with the increase in the severity of coastal storms, will have a negative impact on the KwaZulu-Natal shores, especially the sandy shores (KZN DEDTEA, 2017).

Draft Norms and Standards: Coastal Impacts

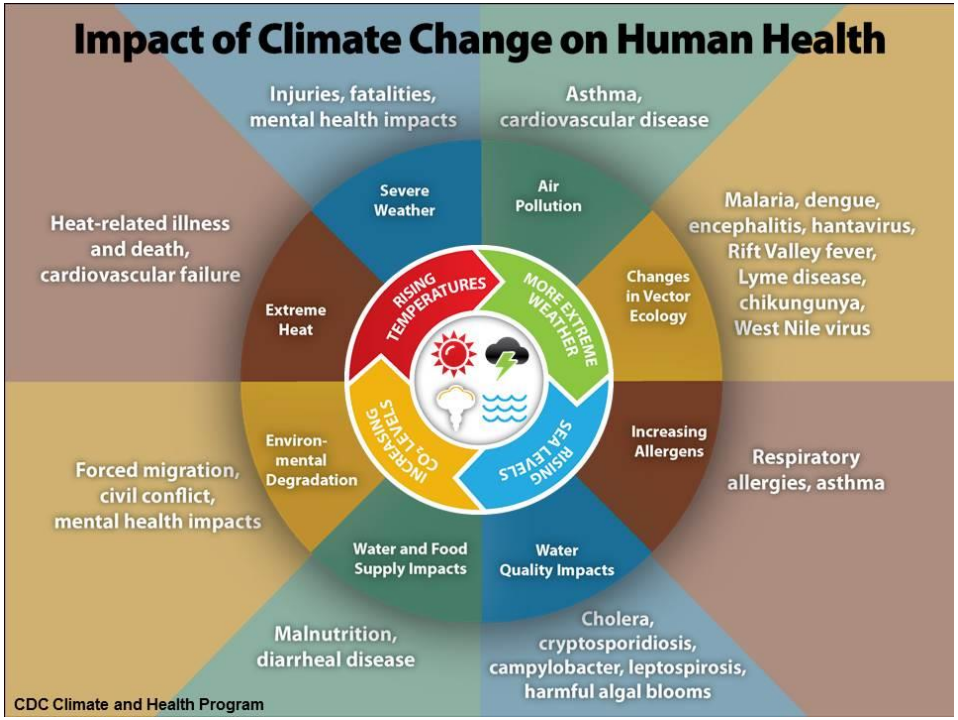
- Objectives
  - To identify areas of high coastal related risk due to climate change
  - To assess potential impacts from sea level rise and more frequent and intense coastal storms
  - To protect existing ecology, public property, and infrastructure in areas of high coastal related risk
  - To encourage managed retreat from the shoreline where other mitigation solutions have failed

Draft Norms and Standards: Coastal Impacts

- Include Coastal Protection Zone and coastal management lines in schemes – overlays are useful
- Ensure that proposed development within these lines complies with their intention – avoid increasing the effects of natural hazards and protect people and property from the risks
- If developing within these lines, details of mitigating measures to be provided
- Use soft engineering solutions where possible
- If hard engineering solutions are proposed – developer to provide an indication of how it will be maintained
- Employ managed retreat where possible where damaged infrastructure is being redeveloped

Draft Norms and Standards Human Health Impacts

- Existing legislation
  - Including: Disaster Management Act, Air Quality Act, National Health Act
- Climate Change Models indicate increases in disaster events related to
  - storms, heat islands, vector borne diseases, non-communicable diseases such as heart respiratory diseases



Draft Norms and Standards: Human Health Impacts

- Objectives
  - To encourage identification and assessment of potential health impacts resulting from Climate Change
  - To ensures that risks associated with Climate Change are incorporated into planning processes including
    - increased climate change related disaster events
    - health impacts from increased temperatures
    - increased vector-borne diseases

Draft Norms and Standards: Human Health Impacts

- Planning for Health Risks
  - Include risks in disaster management plans in strategic plans – IDP and SDF and identify vulnerable communities
- Managing Health risks linked to disasters
  - Discourage development in high risk areas
  - Include open space – ecosystem services
  - Maximise permeable surfaces and minimise hard surfaces
  - Encourage indigenous planting
  - Install water and sanitation infrastructure out of flood risk areas
  - Assist with restoration of ecosystem services – open space
- Managing health risks of vector borne diseases
  - Buffer wetlands
- Manage Health risks of increased temperatures
  - Apply SANS10400-XA
  - Public Open Spaces
  - Promote NMT
  - Encourage shade planting, open spaces green roofs, cool roofs, cool paving
  - Avoid air pollutants near residential areas

Draft Norms and Standards: Energy Efficiency

Draft Norms and Standards: Energy Efficiency

- Applicable to all levels of planning
- Most research at the level of the building – need to extend this to the rest of planning
- Two aspects
  - Spatial form
  - Renewable energy technologies

https://blvdsarasota.com/which-sarasota-neighborhood-landed-on-redfins-10-most-walkable-neighborhoods/

https://dirt.asla.org/2014/04/18/new-york-city-shifts-away-from-the-car/

https://www.ucsusa.org/clean-energy/renewable-energy#.W-lrRZNLjIU

Draft Norms and Standards: Energy Efficiency – Spatial Form

- Objectives
  - To encourage the design of spatial plans that promote energy efficiency in order to contribute to the mitigation of climate change impacts
  - To provide Municipal officials with the tools to assess spatial plans from an energy efficiency perspective

- No ideal energy efficient spatial form as it is a result of many social and economic forces, not just planning
- However, strive for a more robust spatial form
  - Plan an environment that reduces the need for energy i.e. reduces the need for transport, heating and cooling.
  - Address unavoidable energy demand in an efficient way through the use of renewable energy and planning efficient spatial structure.
- Complex

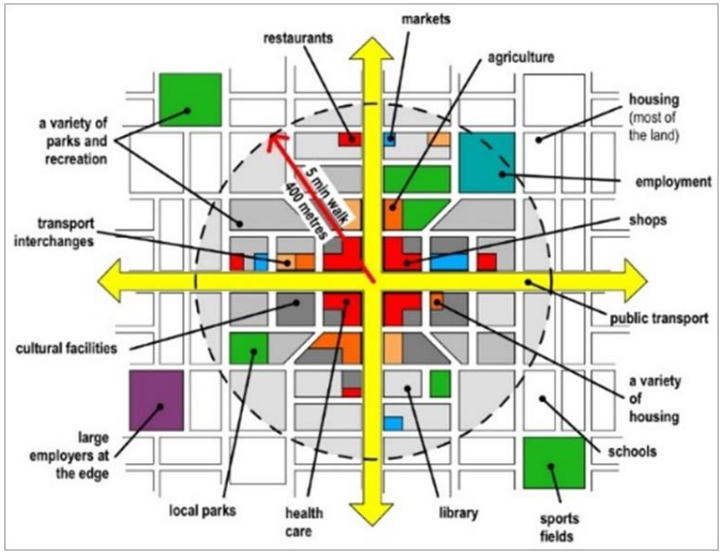
Draft Norms and Standards: Energy Efficiency – Spatial Form

Principles rather than norms and standards

- Reduce the need for travel by transport that uses traditional fossil fuels
- Reduce the need for heating and cooling
- Address unavoidable use of energy in an efficient way
- Reduce heat islands
- Manage carbon sinks
- Promote passive solar design
- Reduce shadowing if using solar energy and consider space about buildings

Energy efficient spatial form

- Compact and dense (whilst avoiding high levels of congestion, overshadowing, lack of ventilation)
- Pedestrian scale, walkable neighbourhoods designed for people not cars
- Mixed use (building, site, neighbourhood level)
- Public Transit orientated development
- Indigenous landscaping/planting, open space and water bodies



The Walkable Neighbourhood Structure (Source: Urban Solutions)

Draft Norms and Standards Energy Efficiency – Energy Efficient Installations

- Renewable Energy technology is a growing field that has implications for Land Use Management and protection of amenity.
- Most schemes do not, as yet, address the management of the impacts of Renewable Energy installations.
- Objectives
  - Promote the use of renewable energy installations in order to contribute to greater energy efficiency and thus reduce greenhouse gas emissions and the impact of these on climate change.
  - Mitigate and manage the potential negative impact of the installation of renewable energy technologies, specifically solar water heaters, Photovoltaic installations, and wind turbines on surrounding land uses.

Three Technologies Addressed

1. Solar Water Heaters
2. Photovoltaics
3. Wind Turbines

- In all instances address free standing and on roofs

http://blog.intheswim.com/affordable-diy-solar-pool-heating/

www.alamy.com/stock-photo/solar-energy-africa.html

http://www.eco-h2o.co.za/page/30/

https://www.greenbuildingafrica.co.za/solar-water-heating/

http://www.offgridtech.co.za/Projects-Completed/

www.habitat.com

Incorporating Energy Efficient Installations into Schemes

- All installations require a building plan
  - Minor Building works OR
  - Full Building Plans AND
  - Necessary compliance certificates from engineers and / or plumbers
- When a planning application is required (depends on potential impact – size, location, noise)
- Usually a special consent application
  - Just with neighbours consent, OR
  - Full advertisement

Thank You for your participation

Please source a copy of the draft document from
http://www.kzncogta.gov.za/norms-and-standards/

Send your comments by 7 Dec 2018 to
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