

# NAG-CITY

## Utrecht Workshop

16.3.12

**NAG**, NE Atlantic Geoscience; cooperative agreement 15 Sept 2008 between National Geological Surveys of Great Britain (incl. N.Ireland), Ireland, Netherlands, Norway, Germany, Iceland, Denmark & Greenland (incl. Faroe Islands).

5 theme areas of significant overlap in interests of NAG surveys:

- Tectonic development of North Atlantic
- The North Sea
- Seabed mapping
- **Urban geology**
- **Groundwater issues**

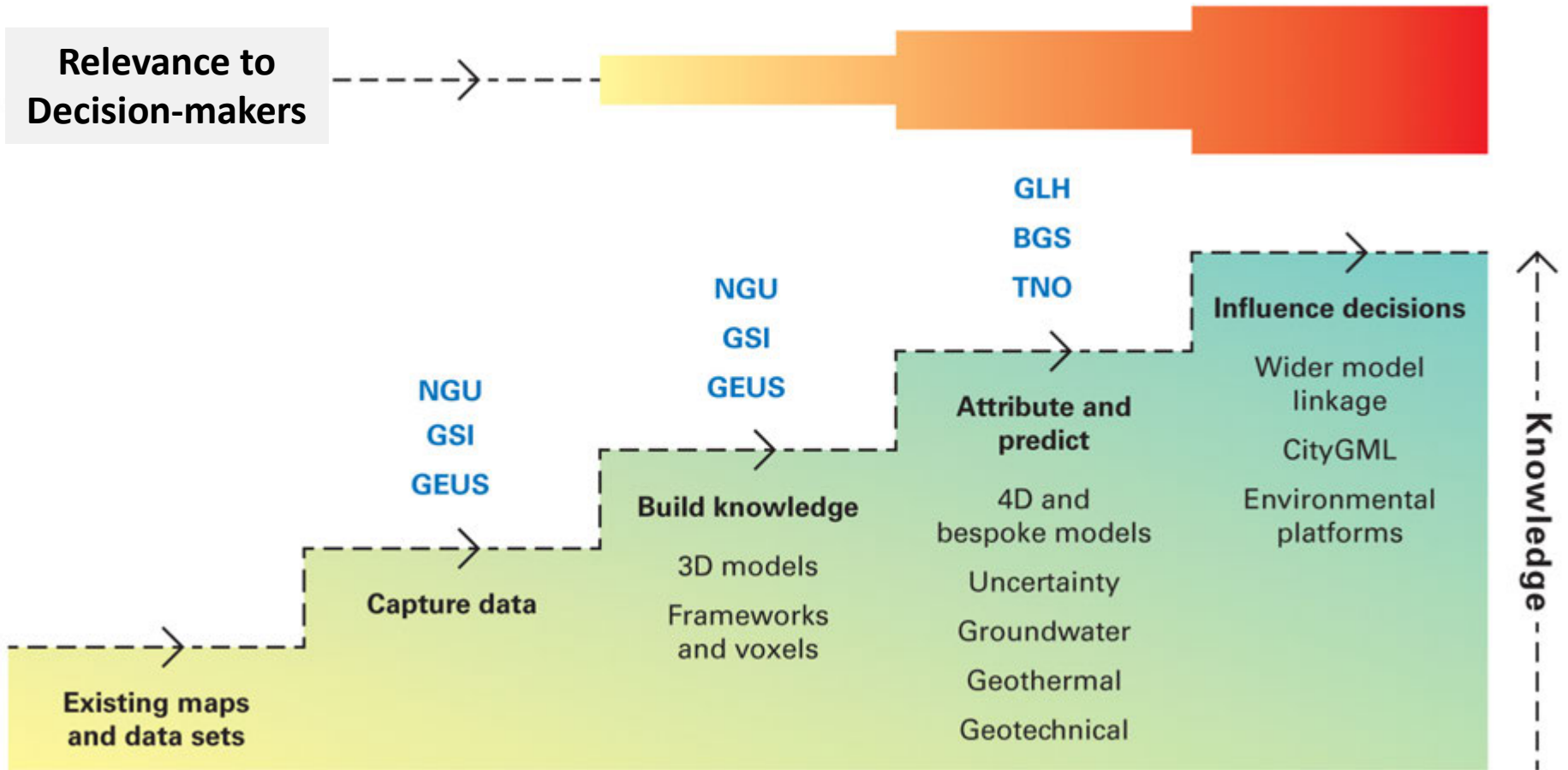
# NAG-CITY Progress

Network building (June- December 2011) & Presentation to NAG Directors

Core partners -**GSN, BGS, NGU, GEUS, GSI, GLH; & GSNI**

- recognise mutual benefits of partnership
- will further common aims in urban geology by sharing :
  - skills
  - expertise
  - methodologies
  - technical capability, and
  - experience & knowledge, & with decision makers/end-users

# Current States of Urban Knowledge & Aims



# Develop Virtuous Circles

**3D models developed and updated by Geological Surveys & delivered to City Partners**

**3D models used for decision making by City Partners**



**3<sup>rd</sup> Party data captured & re-used by Geological Surveys**

**3<sup>rd</sup> Party data acquired – channel through City Partners**

# NAG-CITY – Generic Issues

- improve subsurface data capture, management, re-use, delivery – standardise (but not between countries) digital data formats / schemas
- refine 3D and 4D subsurface model workflows, model linkages and web and mobile delivery
- target research and technical development (with research institutes/universities) relevant to decision makers
- **develop close partnerships with Cities/Municipalities**

# NAG-CITY – City Partners

One city per partner now ; next cities

	population
• TNO – Utrecht (Randstad)	0.2-0.3 million
• GEUS – Odense (Aarhus)	
• BGS – Glasgow (London/Birmingham)	1.2-1.4 million
• GSI – Dublin (Cork)	
• NGU – Oslo (Bergen / Trondheim)	
• GLH– Hamburg (n/a)	4.2 million
	Total 8.5 million ( c. 5% of NW Europe) (further >10%)

GSNI may involve Belfast

**Potential issues:**

- (Ground)water
- Geothermal
- Industrial legacy
- Rivers/flooding
- Tunnelling/sewer
- Building resources
- Ground stability
- Contamination
- Heritage
- Coastal (some)



# Key Research Issues

- (Ground)water models
  - SuDS infiltration
  - Flood risk management
  - Aquifer protection
  - Stability etc
- Thermal resource models; optimise use
- Anthropogenic deposits, integrate with natural ground and buried infrastructure in 3D models / visualisation
- Integrate subsurface and above ground urban models (e.g. CityGML) – delivery

Involve external research partners and proposals to funding bodies

Exploit external funding (EU, national)



# NAG-CITY A three-fold Strategy

**1. Quick Wins:** secondments between survey and city partners

- Partners more advanced to assist others at earlier stages in process

**2. Technical and research advances:** partner with Universities, e.g.

- (Ground)water, thermal and property modelling
- Anthropogenic deposits and buried infrastructure

**3. Big Wins:** all partners to similar levels, with common toolkit

- Create freeflow of data/knowledge exchange
- Integrate subsurface and above ground urban models (e.g. CityGML)
- Expand network to other cities, new partners in Europe and beyond

# SUMMARY

- Urban geology is a crucial activity of geological surveys – and will grow
- Technology enables sharing of knowledge, and impetus for step change in survey activities
- Need for close partnerships: surveys – decision makers

But,

- It is a complex set of issues and requires a long term commitment
- Multiple partners will have competing demands

**1+1+1+1+1+1 >6!**

# WORKSHOP AIMS

**How can NAG-CITY help us to achieve our common aims?**

- Demonstrate collective potential of NAG-CITY to City Partners – Where are we now?
- Where we want to go to as partners?(Geological Survey – City Partners) – so what are:
  - surface/subsurface issues we need to address?
  - our synergies?
  - priorities for NAG-CITY if it is to assist decision making?
- Potential secondments to accelerate delivery?
- Potential funding opportunities to help advance NAG-CITY?

**1+1+1+1+1+1 >6!**



# Key City Issues for JPI URBAN EUROPE

**(Ground)water and Flooding**, WFD, SuDS , extreme weather, sea level rise

**Stability** heterogeneous soils, properties and processes

**Contamination**, Soils, artificial ground, surface/groundwater/sea, health

**Resources**, groundwater, minerals, thermal

**Land Use** change impacts, (re-)development, recreational areas

**Cost-benefit** of urban subsurface knowledge

- **Partnerships with decision makers for freeflow of data / knowledge**

[www.jpi-urbaneurope.eu](http://www.jpi-urbaneurope.eu)

# NAG-CITY: Phased Development

## **PHASE I: Inter-survey secondments and networking**

- Put subsurface on the JPI URBAN EUROPE agenda – who takes the lead?
- Kick start by survey contributions (€15-20K) under a NAG-CITY agreement
- Over next 12 months
- Develop working relationships, research ideas
- Foster ‘quick wins’ in data knowledge exchange, initial work with city authorities, other stakeholders

## **PHASE II: Research projects**

- Develop research portfolio with external partners
- Seek grant funding
- Start as soon as practical

# NAG-CITY: Phased Development

## **PHASE III: EU funding COST, INTERREG..**

- Build links with the city authorities /stakeholders / others
- Improve network
- Continue to build track record
- Next call March 2012

## **PHASE IV: Major EU funding proposal (FP7/8)**

- To be determined
- May to be led by city authorities (core and non-core)
- Preparation in early 2012 – bid submission 2012-13
- 3-5 years in duration to 2017?