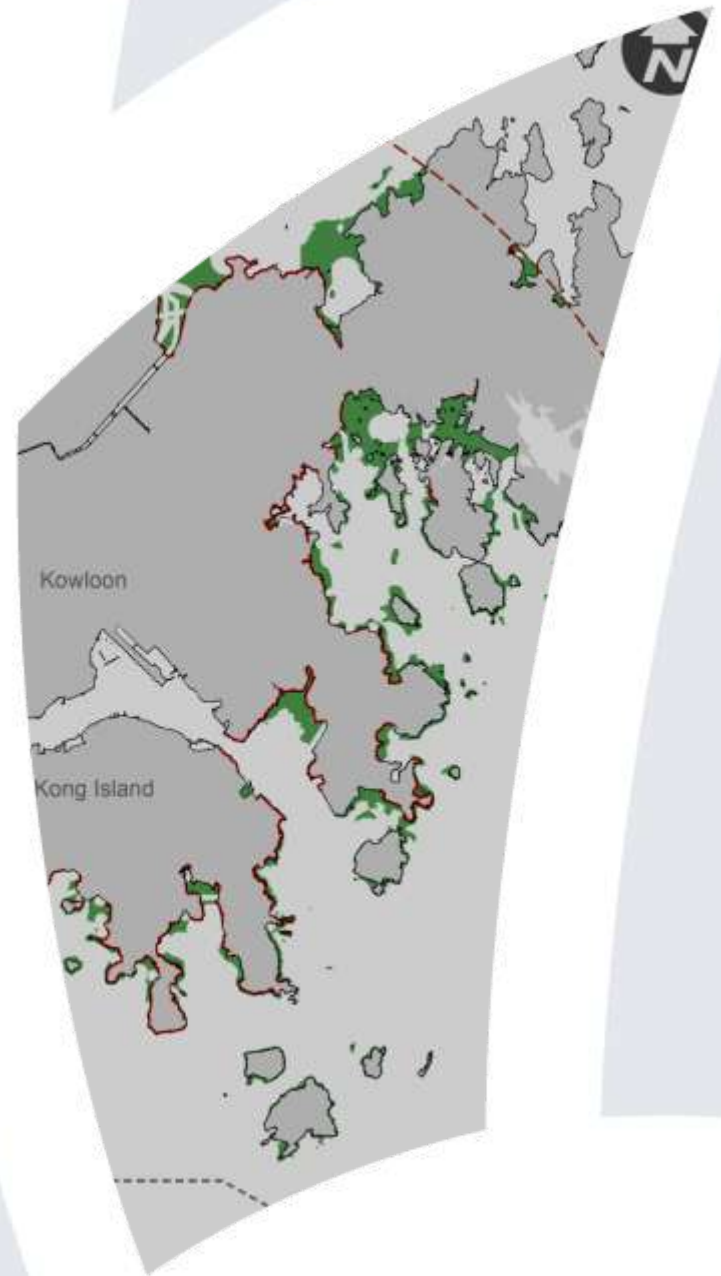


Marine Spatial Planning

Harbourfront Commission's Task Force on Water-land Interface

Sep 2014

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Jonathan Hsu
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BMT Asia Pacific

Our expertise spans **Sea**



A multidisciplinary consultancy, we specialise in environmental, economic, design & planning, logistics and risk management services.

BMT helps clients make critical decisions at every stage of development.



Land



& in Between

Hong Kong's Challenges

1. Tightly regulated land use, but
2. No designation over waterspace (*outside specific port/marine park designations*) =
3. Limited ability to say “Yes”, to new ideas on waterspace usage =
4. “No” =
5. Stagnation



Hong Kong's Need

Can a zoning system be used that:

1. Recognises multi-activity opportunities
2. Reduces conflict, and
3. Is flexible over-time, and goal focussed, rather than prescriptive

We need a framework that captures different knowledge on constraints and opportunities.



The Sea is not Empty.....we need Wisdom

(*Wisdom = The judicious application of knowledge*). Then who has knowledge/
interest in water..... from Government:



*If you can float a boat on it.....*Marine Dept'

*If you can play on it.....*Leisure & Cultural Services Dept'

*If there's fish in it*Agriculture & Fisheries Dept'

*If its got Env' value.....*Environmental Protection Dept'

*If you can drink it.....*Water Services Dept'

*If its dirty.....*Drainage Services Dept'

*If its still raining.....*Hong Kong Observatory

Public Interest

Multiple Parties:

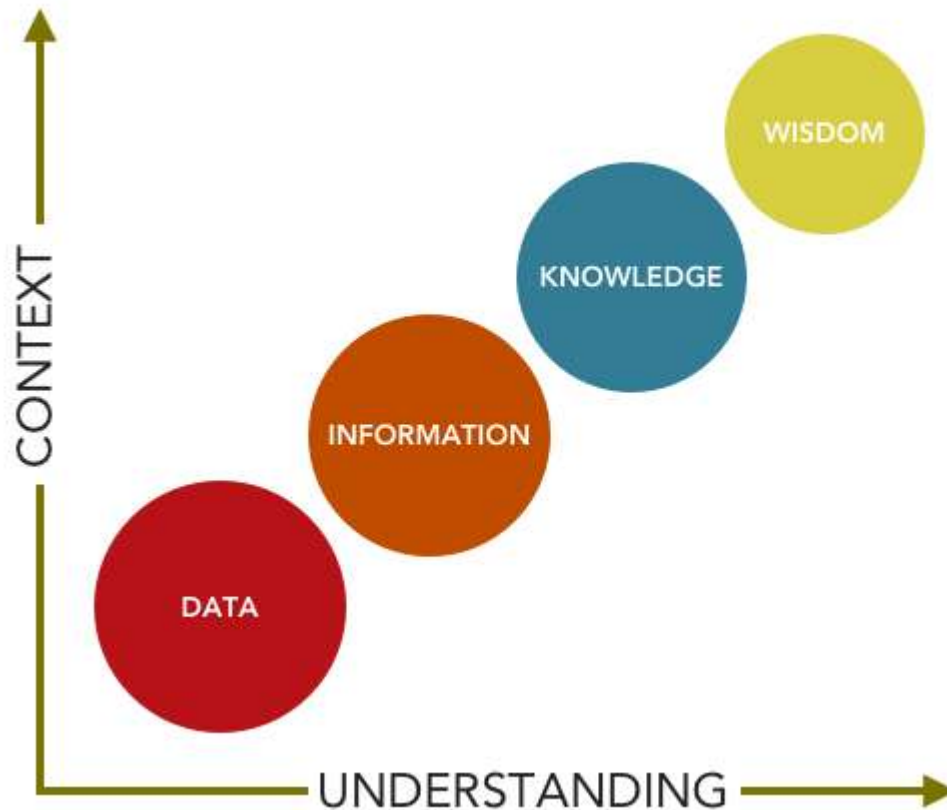
- Government (as previously),
and also:

- Local communities

- Interest Groups:
 - Commercial Users
 - Aqua culture
 - Local fishermen
 - Environment
 - Sports
 - Recreation
 - Other.....



Knowledge for Wise Decision Making



- It is not enough to collect views and data,
- There must be a structure in which linkages can be made,
- connections realised,
- decisions identified, and shared.

Marine Spatial Planning may provide a tool to assist this.

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What is Marine Spatial Planning (MSP)?

It is an integrated public process to:

1. Analyze and allocate the use of marine space.
2. Manage interactions between uses.
3. Identify and achieve economic, ecological and social objectives.

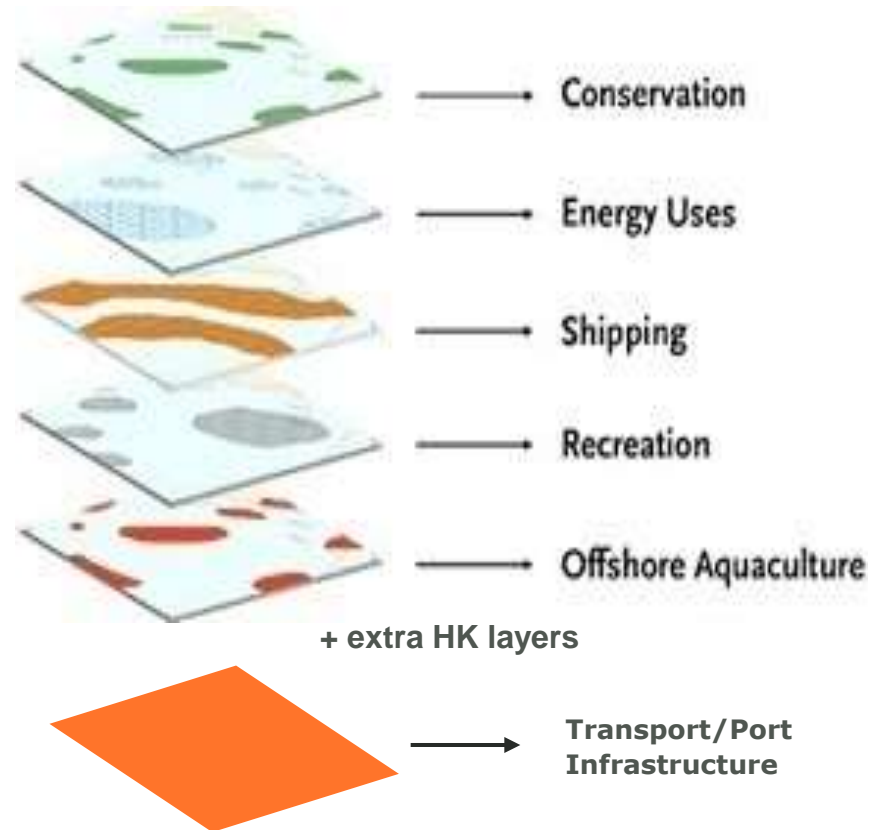


image (c) Ocean Conservancy

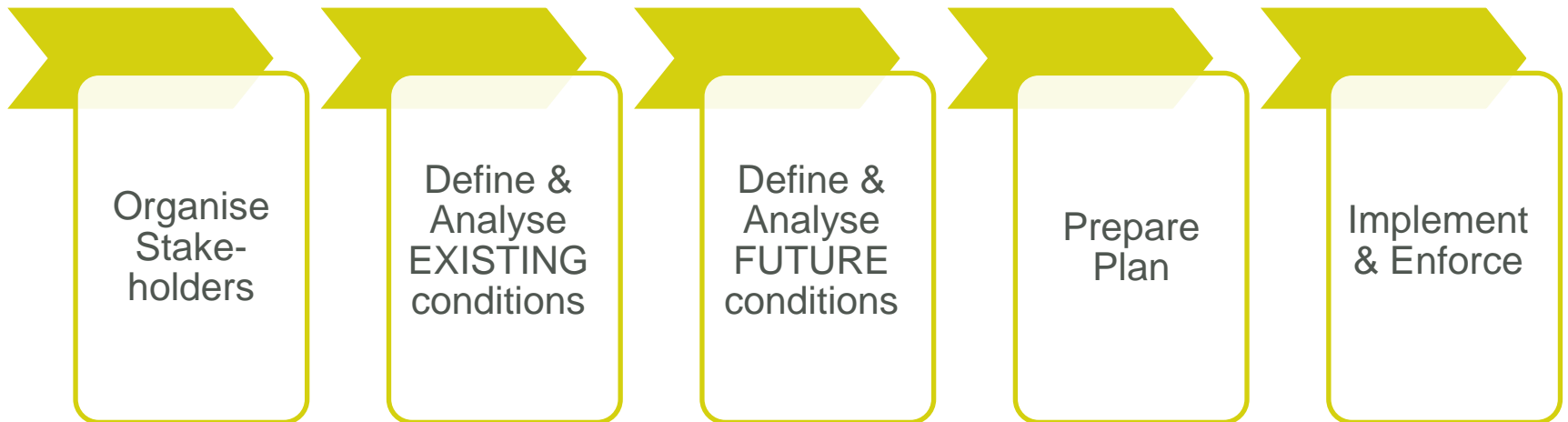
An Integrated Public Process (1)

Marine Spatial Planning should be:

- **Integrated**
 - Providing an integrated framework for management across all sectors and government.
- **Public**
 - Stakeholders actively involved throughout the process.
- **A Process**
 - MSP does NOT lead to a linear one-time plan.
 - It is a continuing, iterative process that adapts over time.
 - Feedback loops should be built in.

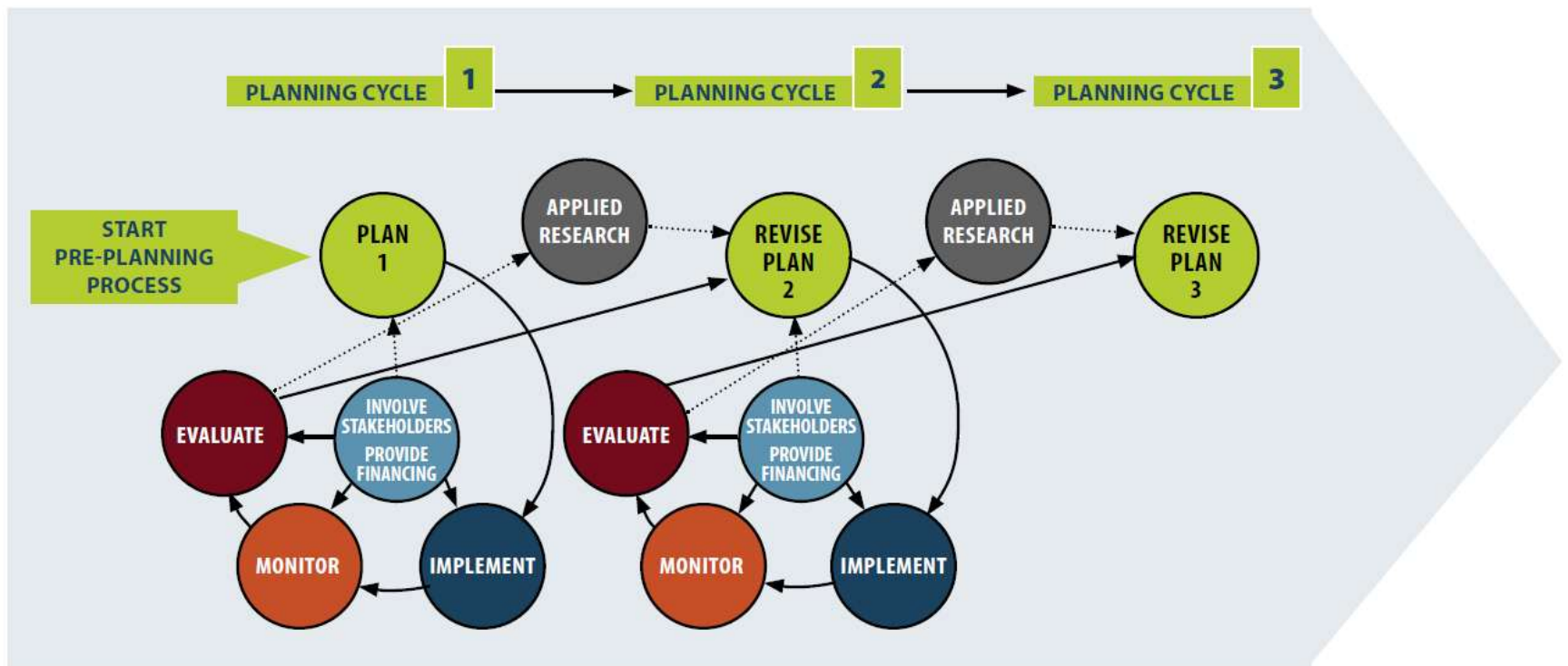
An Integrated Public Process (2)

MSP Key Tasks:



An Integrated Public Process (3)

The continuing MSP planning cycle:



Source: Modified from figure in *Marine Spatial Planning – A Step-by-Step Approach toward Ecosystem-based Management*, UNESCO 2009

Analyze & Allocate Use of Marine Space (1)

Analyze distribution of important areas:

- Some marine areas are more important - both economically and ecologically.
- Marine space should be analyzed to understand and map these areas.
- Current and future value should be identified.

Allocate marine uses to meet demands:

- Many marine areas cannot simultaneously meet all demands for use.
- The value of marine space cannot be entirely expressed in monetary terms.
- MSP can be used to decide what mix of services and goods will be “produced” from the marine area.

Analyze & Allocate Use of Marine Space (2)

Examples of services and goods from marine spaces:

Goods

- Fisheries
- Marine animals for recreation, e.g., dolphin watching
- Sand and gravel
- Marine minerals
- Other raw materials, e.g., building materials, traditional crafts
- Energy

Services

- Marine transportation routes
- Tourism, leisure and recreation
- Cultural heritage and identity
- Education and research
- Habitat e.g., nursery areas for fish
- Waste disposal
- Aesthetics

Manage Interactions Between Uses (1)

There are problems with existing single-sector analysis and allocation...

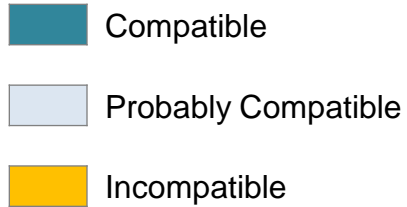
- Most countries already zone marine space, but this is usually done on a sector-by-sector basis without much consideration of other uses.
- The result of zoning without MSP is a chaotic pattern of overlapping and conflicting zones.
- This situation often leads to conflicts between users and uses.
- Allocation being done on a case-by-case basis also means that decision-makers often end up in a reactionary role.

Manage Interactions Between Uses (2)

MSP will identify a comprehensive vision for the future...

- MSP is about the allocation of marine spaces to specific uses.
- Some uses may be compatible with others, some uses will preclude others.
- MSP recognizes that ultimately **choices will have to be made** on what marine uses to prioritize over others.
- Therefore a key role for MSP is to provide a vision that **will identify the hierarchy of economic, ecological and social needs** for a marine area.
- This will allow choices to be made confidently in a integrated way

Manage Interactions Between Uses (3)



	Commercial Fishing: Nets	Commercial Fishing: Hook/line	Commercial Fishing: Pots/traps	Commercial Fishing: Trawls/dredges	Commercial Fishing: Seine nets	Offshore Aquaculture/Mariculture	Recreational Fishing: Hook/line	Recreational Fishing: Pots/traps	Recreation: Boating	Recreation: Scuba diving/snorkeling	Recreation: Wildlife watching	Marine transportation	Port & harbor operations	Port & harbor dredging	Dredged material disposal
Commercial Fishing: Nets	Compatible	Compatible	Compatible	Compatible	Compatible	Probably Compatible	Probably Compatible	Incompatible	Probably Compatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible
Commercial Fishing: Hook/line	Compatible	Compatible	Compatible	Compatible	Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible
Commercial Fishing: Pots/traps	Compatible	Compatible	Compatible	Incompatible	Compatible	Probably Compatible	Probably Compatible	Incompatible	Probably Compatible	Probably Compatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible
Commercial Fishing: Trawls/dredges	Compatible	Compatible	Incompatible	Compatible	Compatible	Incompatible	Probably Compatible	Incompatible	Probably Compatible	Probably Compatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible
Commercial Fishing: Seine nets	Compatible	Compatible	Compatible	Compatible	Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible
Offshore Aquaculture/Mariculture	Probably Compatible	Probably Compatible	Probably Compatible	Incompatible	Probably Compatible	Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Incompatible	Incompatible	Incompatible	Incompatible
Recreational Fishing: Hook/line	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Incompatible	Incompatible	Incompatible	Incompatible
Recreational Fishing: Pots/traps	Incompatible	Probably Compatible	Incompatible	Incompatible	Probably Compatible	Probably Compatible	Compatible	Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Incompatible	Incompatible	Incompatible	Incompatible
Recreation: Boating	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Compatible	Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Incompatible	Incompatible
Recreation: Scuba diving/snorkeling	Incompatible	Incompatible	Probably Compatible	Incompatible	Incompatible	Probably Compatible	Probably Compatible	Probably Compatible	Compatible	Compatible	Probably Compatible	Incompatible	Incompatible	Incompatible	Incompatible
Recreation: Wildlife watching	Incompatible	Probably Compatible	Incompatible	Incompatible	Incompatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Probably Compatible	Compatible	Incompatible	Incompatible	Incompatible	Incompatible
Marine transportation	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Probably Compatible	Incompatible	Incompatible	Compatible	Compatible	Probably Compatible	Probably Compatible
Port & harbor operations	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Probably Compatible	Incompatible	Probably Compatible	Compatible	Compatible	Compatible	Probably Compatible
Port & harbor dredging	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Probably Compatible	Probably Compatible	Compatible	Probably Compatible
Dredged material disposal	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible	Probably Compatible	Probably Compatible	Probably Compatible	Compatible

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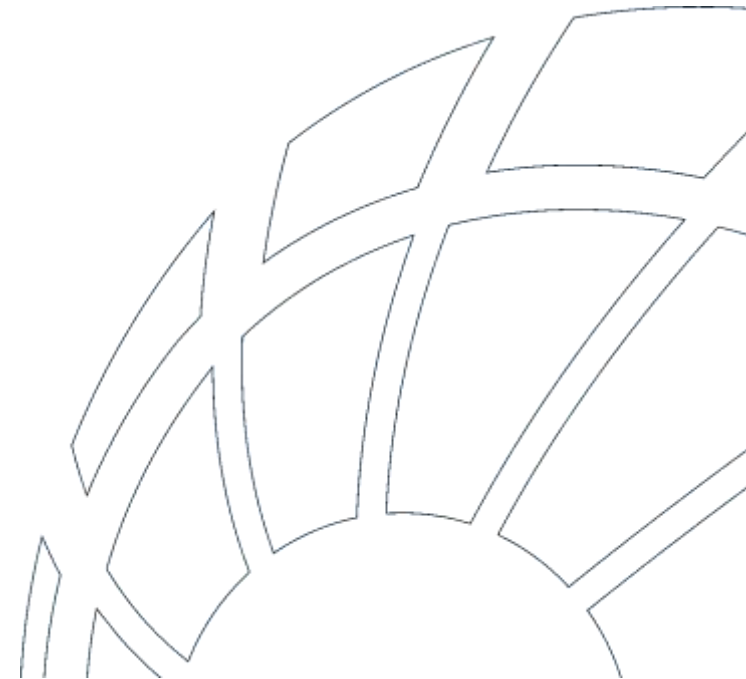
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Summary

MSP is NOT only about planning.

- MSP is really about marine spatial management with at least three phases:
 1. **Planning and analysis** that generate information for developing a management plan;
 2. **Implementation**, including enforcement of management measures of the plan; and
 3. **Monitoring and evaluation** of plan performance that could result in changes to the plan over time.
- **Real outcomes, not the process, are the goals of MSP!**

Benefits (1)

Economic benefits include:

- Identification of compatible uses
- Reduction of conflicts between incompatible uses
- Improved capacity to plan for new and changing human activities
- Greater certainty of access for private sector investments
- Better safety during operation of human activities
- Promotion of the efficient use of resources and space
- Streamlining and transparency in permit and licensing procedures

Benefits (2)

ECOLOGICAL benefits may include:

- Identification of biological and ecological important areas
- Biodiversity objectives incorporated into planned decision-making
- Identification and reduction of conflicts between human use and nature
- Allocation of space for biodiversity and nature conservation
- Establish context for planning a network of marine protected areas
- Identification and reduction of the cumulative effects of human activities on marine ecosystems

Benefits (3)

SOCIAL benefits may include:

- Improved opportunities for community and citizen participation
- Identification of impacts of decisions on the allocation of ocean space for communities and economies onshore
- Identification and improved protection of cultural heritage
- Identification and preservation of social and spiritual values related to ocean use (e.g., the ocean as an open space)

Establishing Appropriate Authority for MSP

Ensure that the marine spatial management plan is enforceable.

- Development of Marine Spatial Planning requires two types of authority:
 1. Authority to plan for MSP; and
 2. Authority to implement MSP.
- Both types of authority are equally important. They could be combined in one organization, but usually:
 1. new authority is established for MSP planning
 2. Implementation is carried out through existing authorities and institutions.

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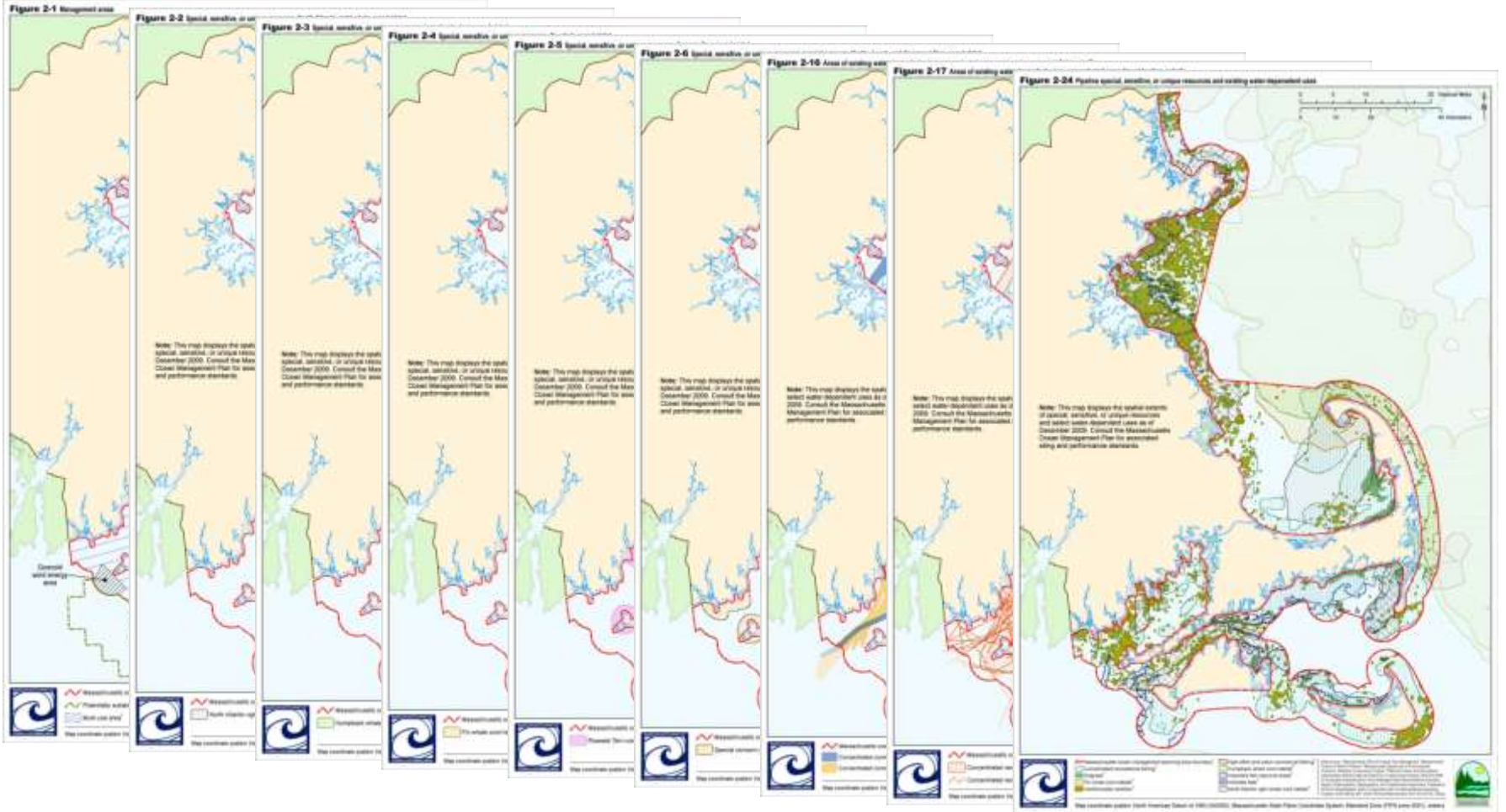
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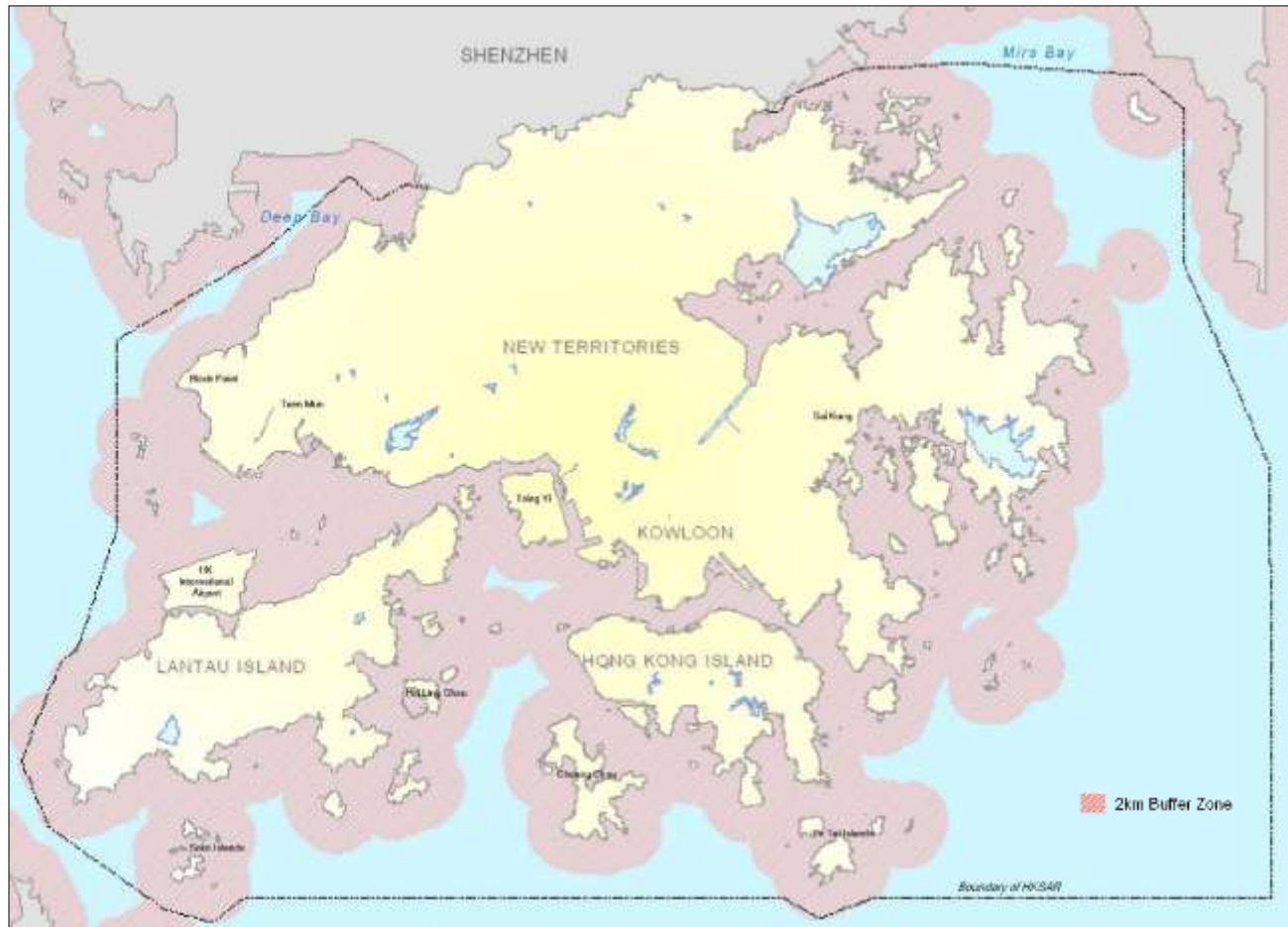
MSP for Massachusetts, USA



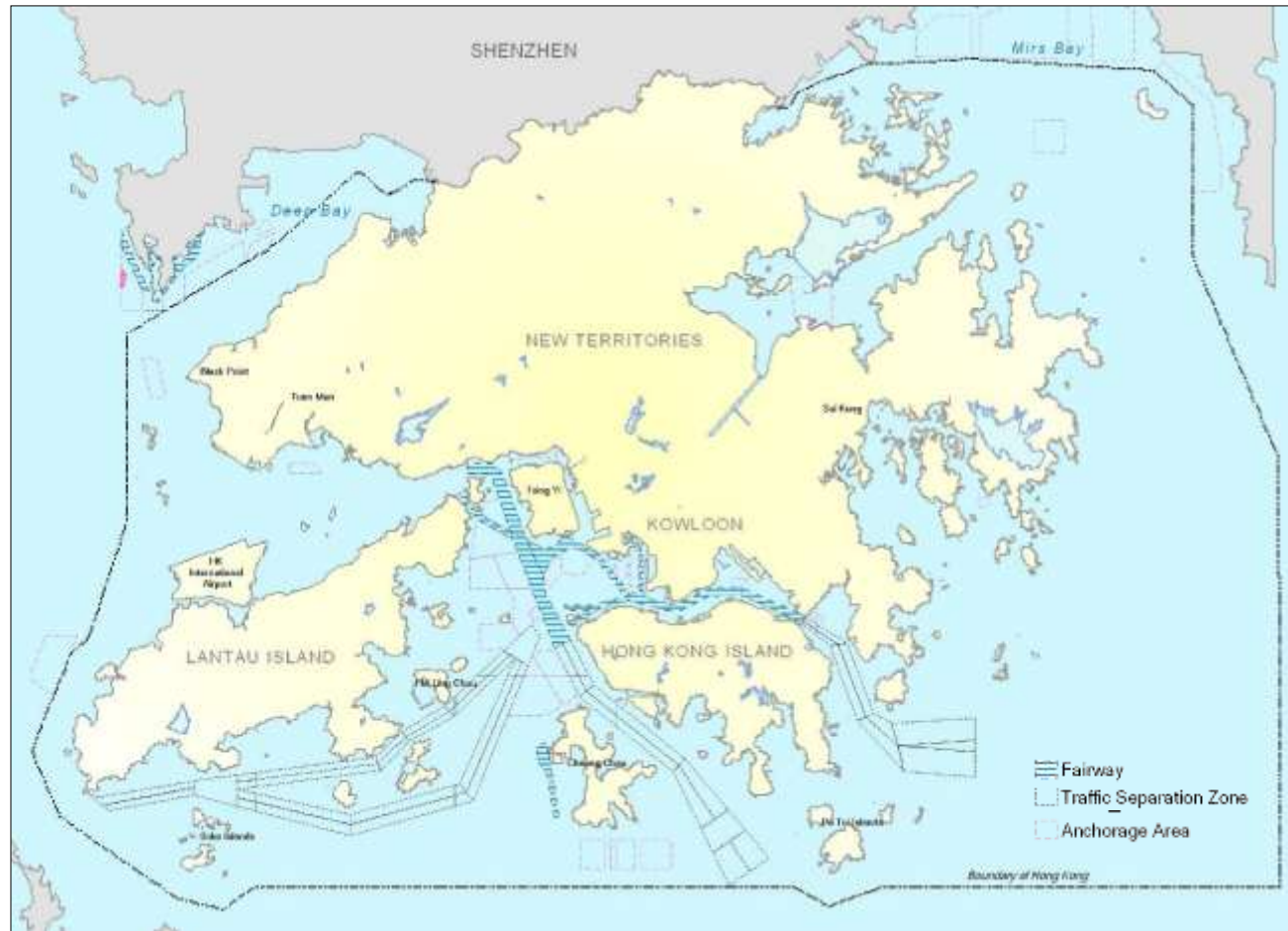
Offshore Wind Farm Siting in HK



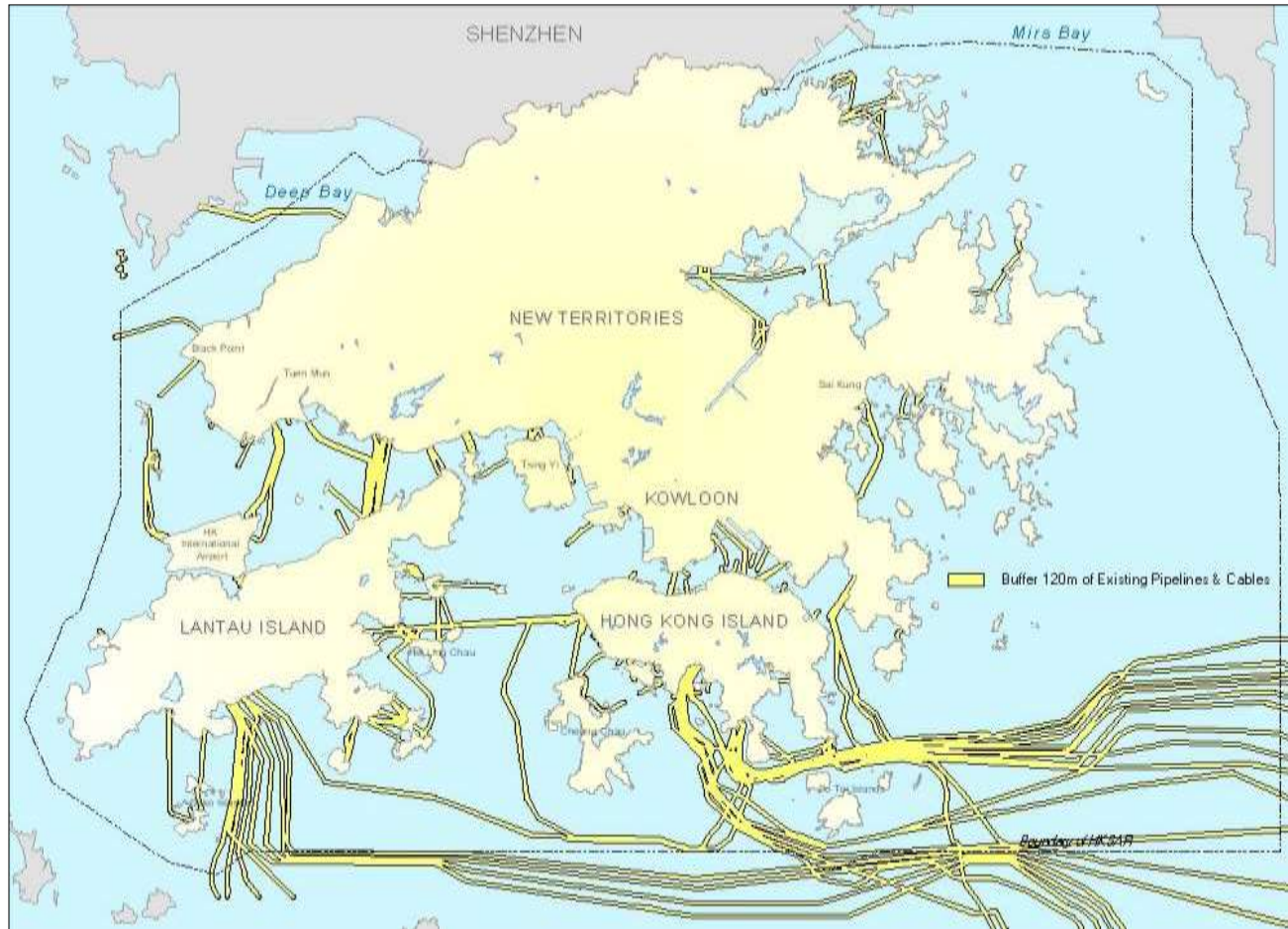
Marine Env' – Coastline Exclusion Zone



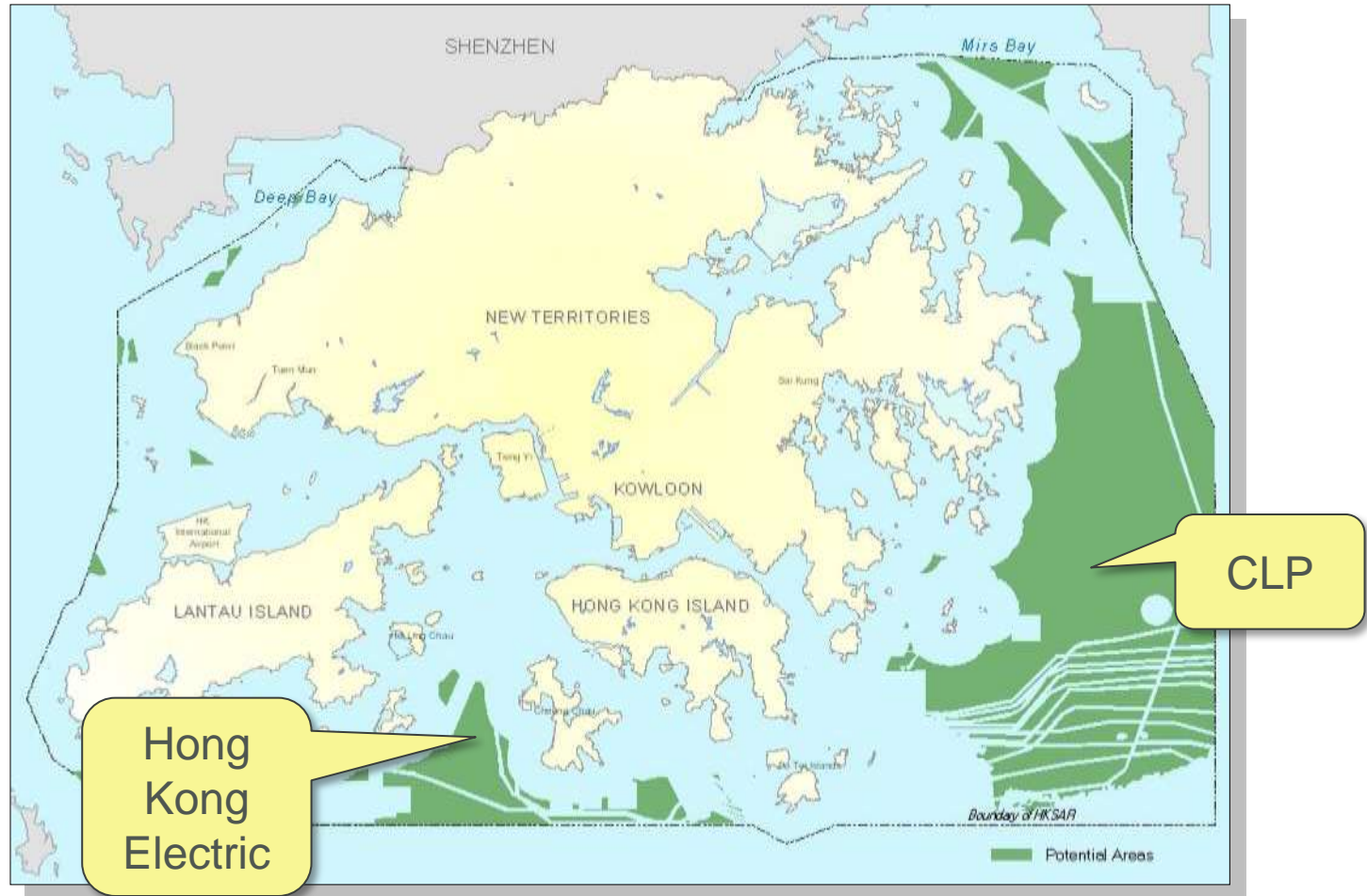
Anchorage, Fairways & Channels



Subsea Infrastructure



Potential Areas



Marina / Marine Leisure Opportunities?

Just Imagine.....

- Public Marina sites
- Waterborne Leisure
- Youth recreation
- Outward Bound centres
- Houseboats



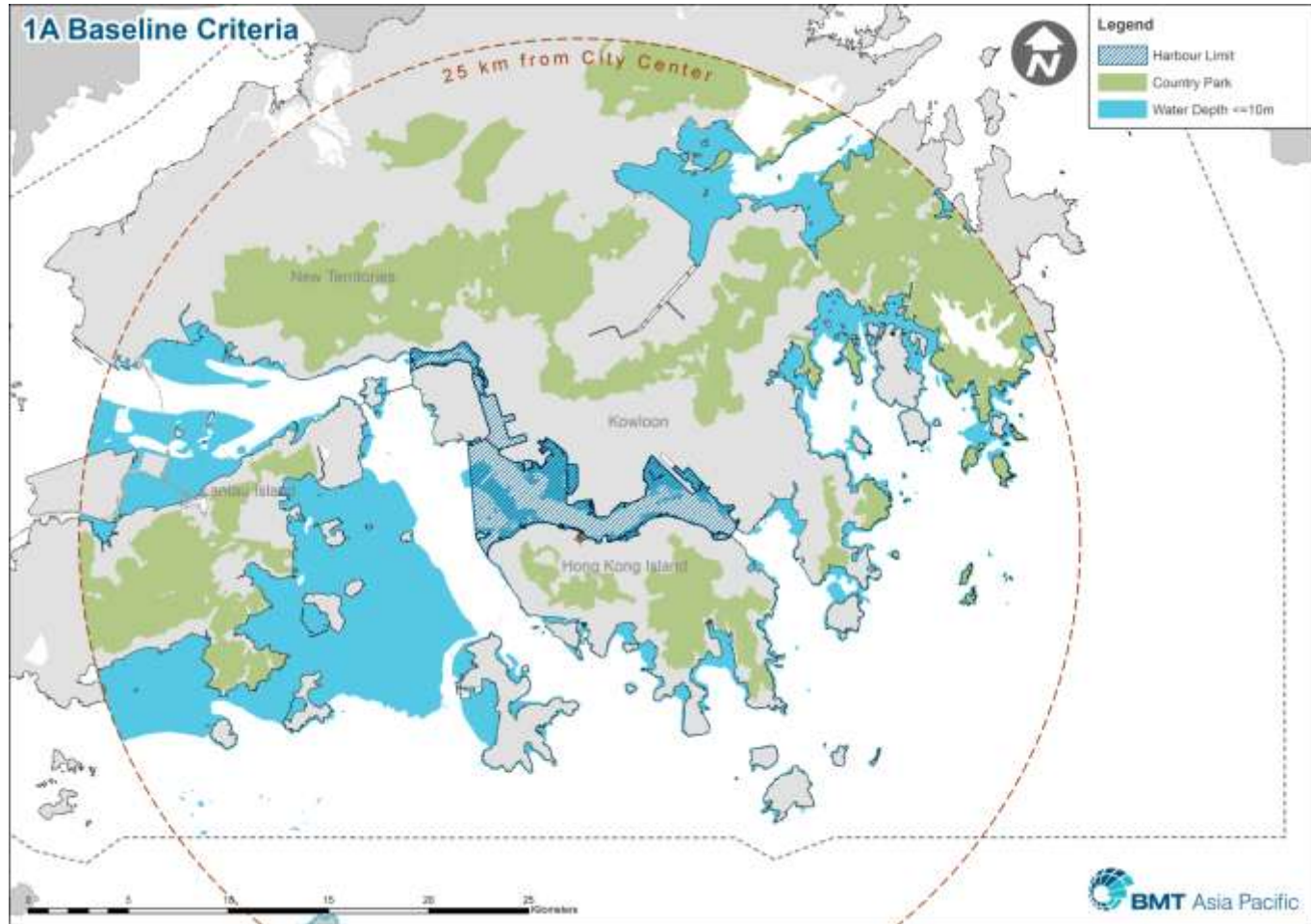
Assuming the future Harbourfront Authority will address needs within Harbour limits.....

which future Hong Kong sites could be viable? GIS Site Search based primarily on AVOIDANCE.

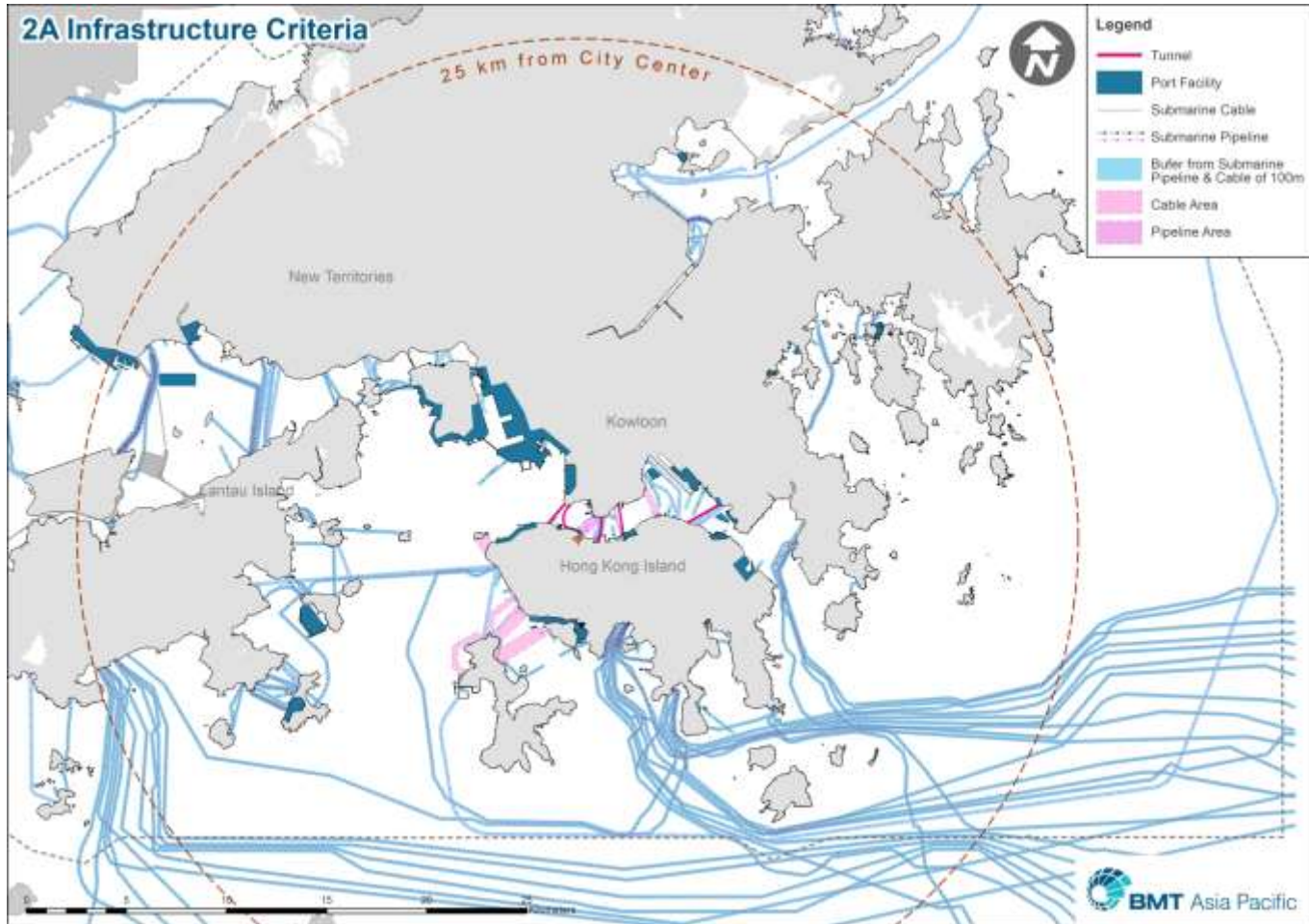


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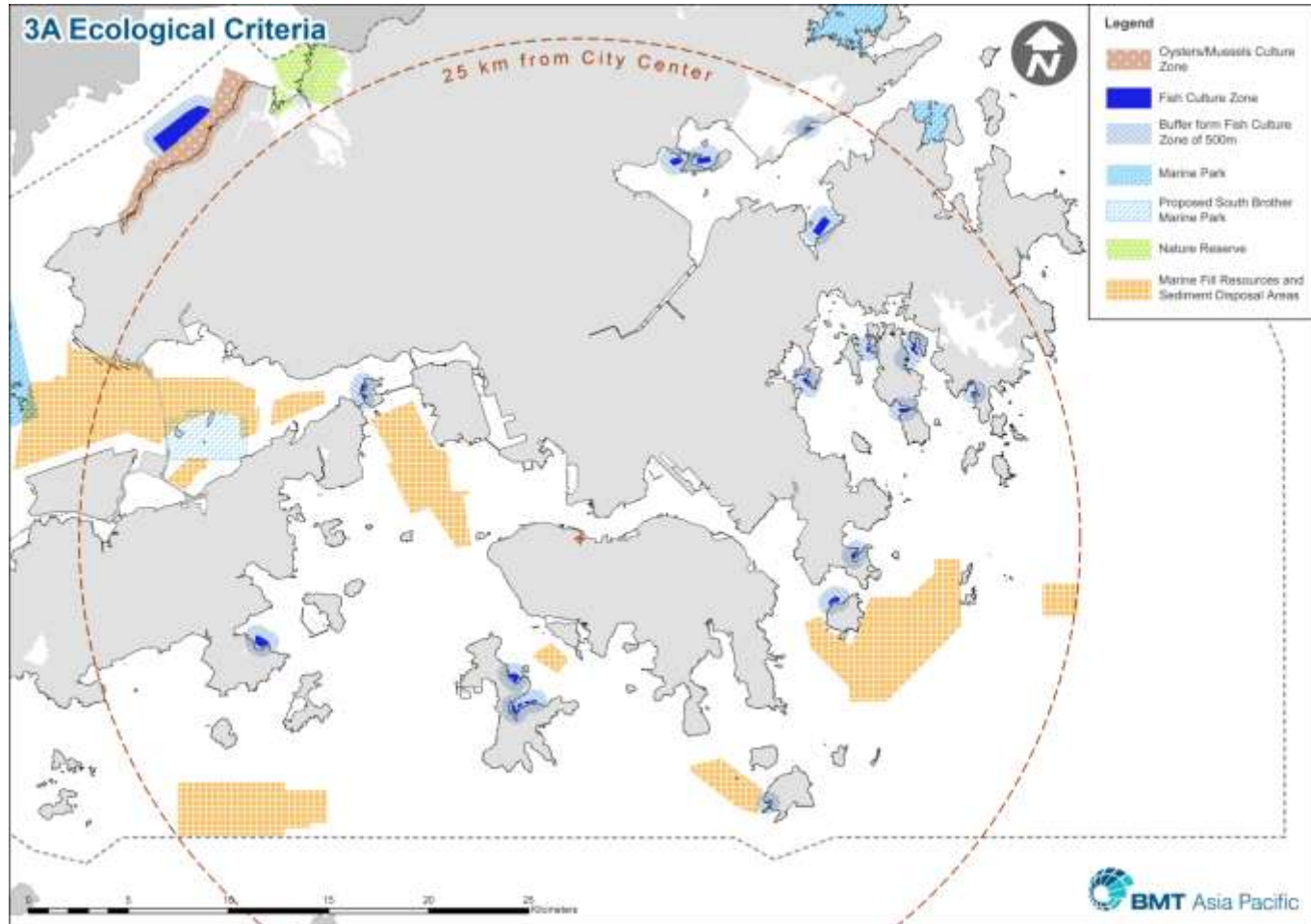
Near Central, not too deep or Country Park



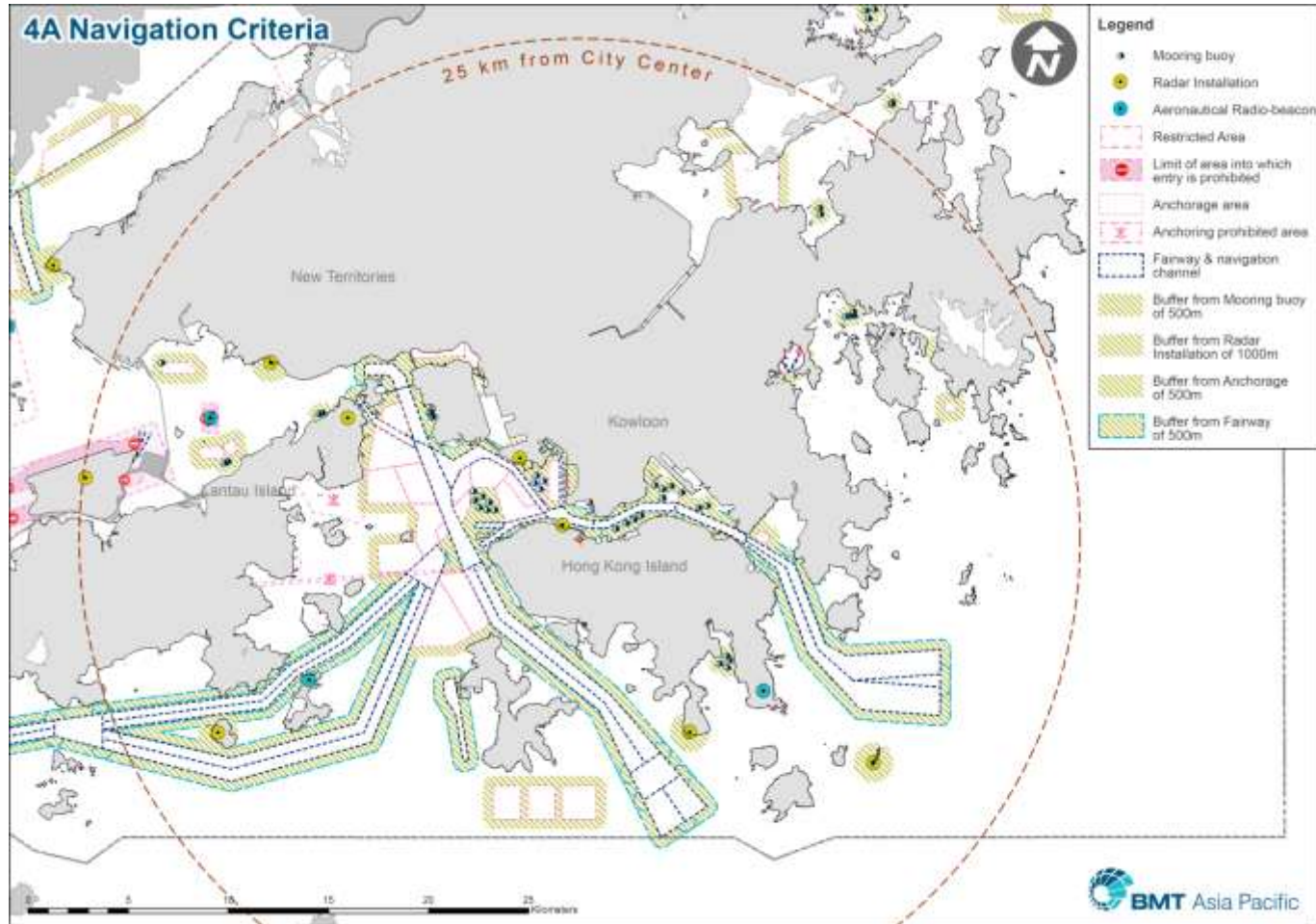
Avoid Dense Submarine Infrastructure



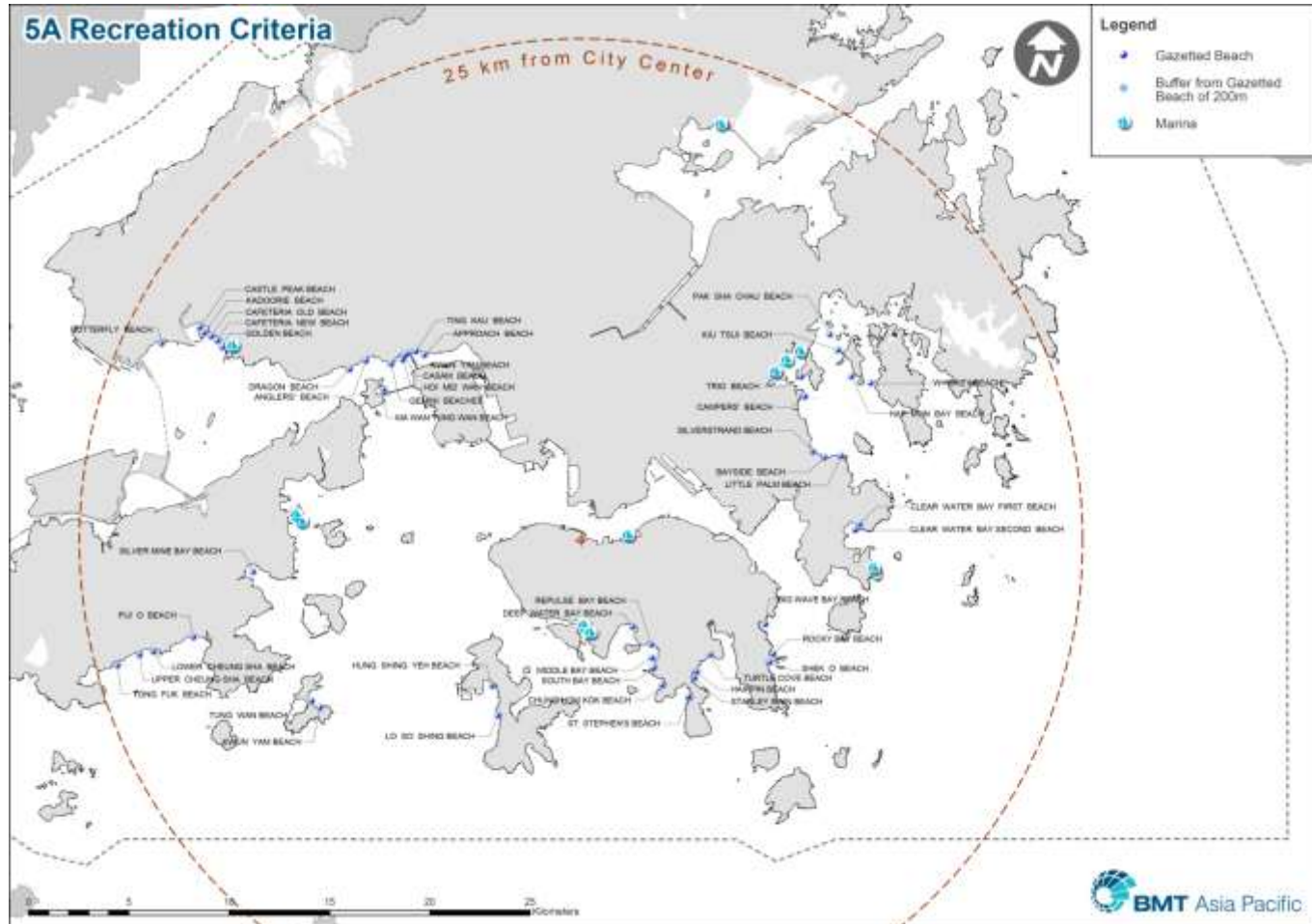
Avoid designated Ecological, Seabed users



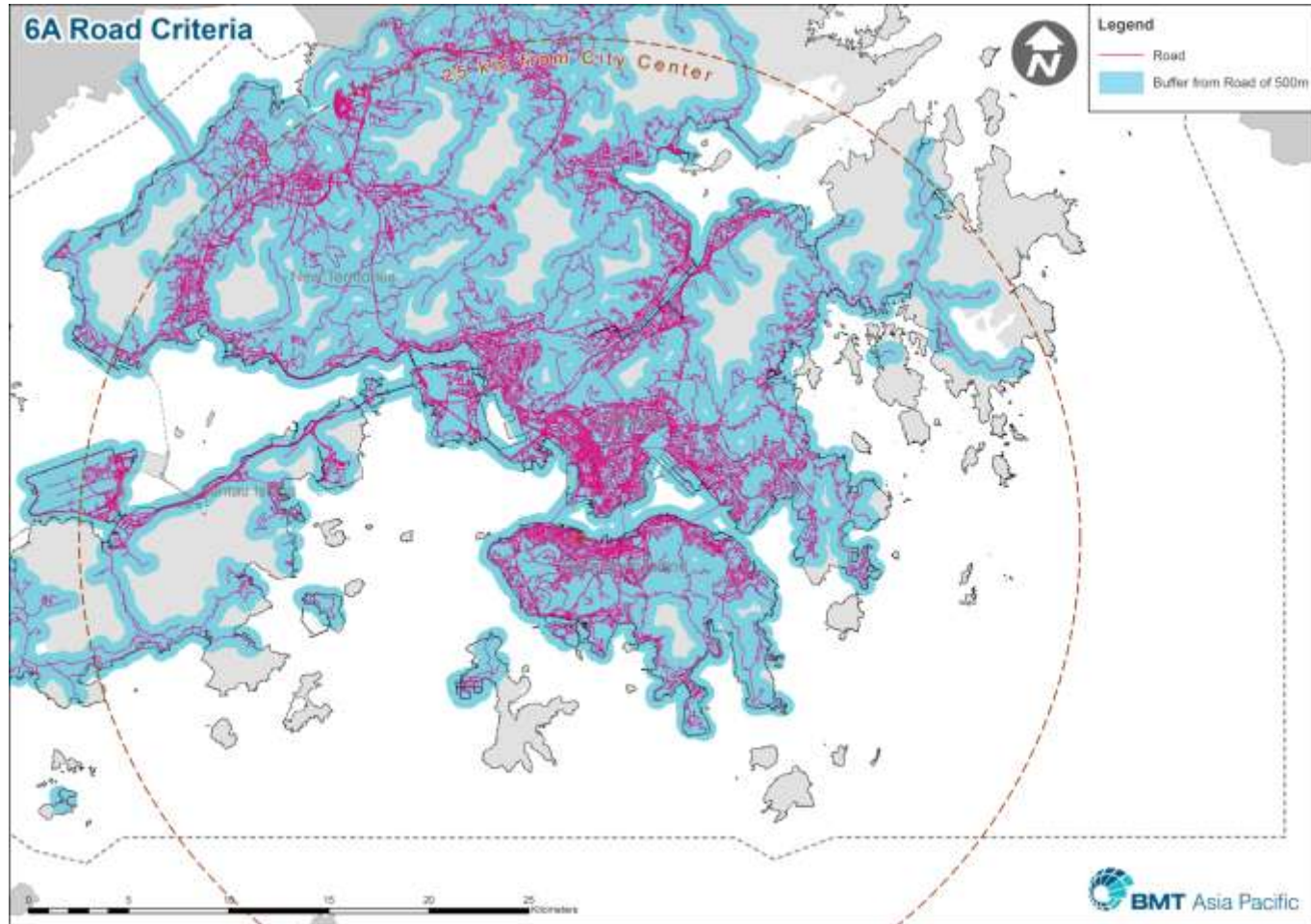
Avoid Commercial Shipping Infrastructure



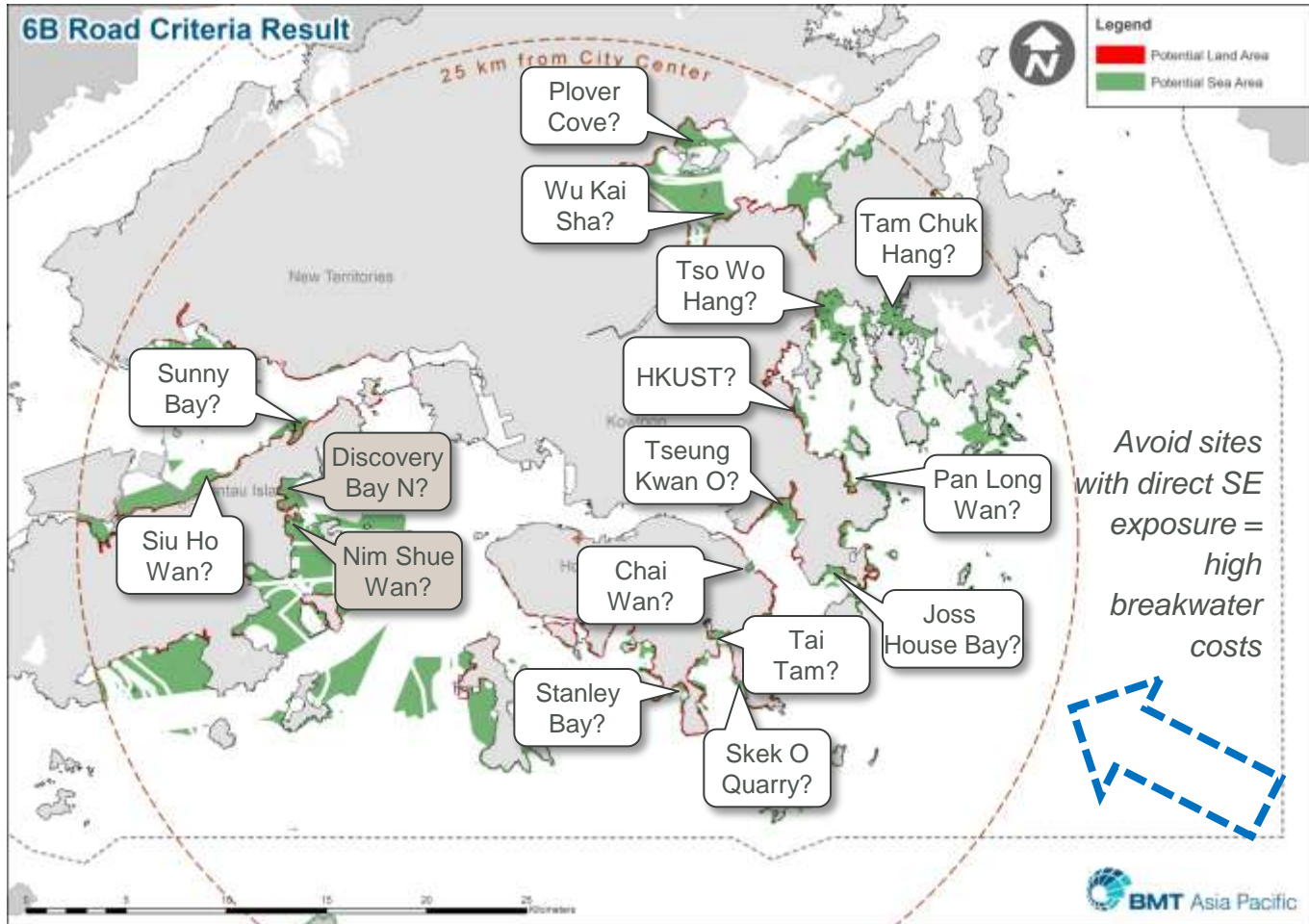
Avoid co-location with Existing Beaches



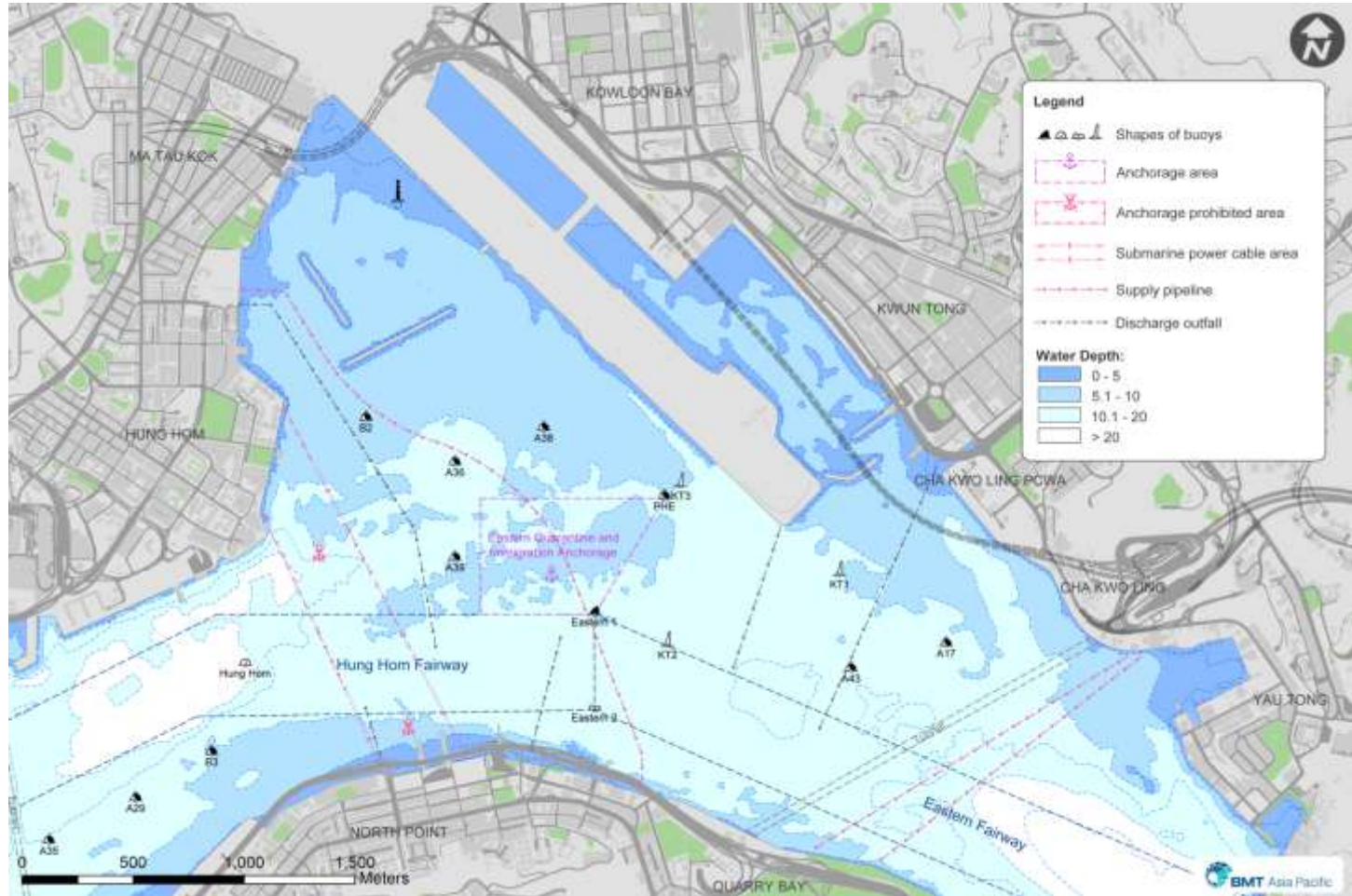
Be near (<500m) from existing Roads



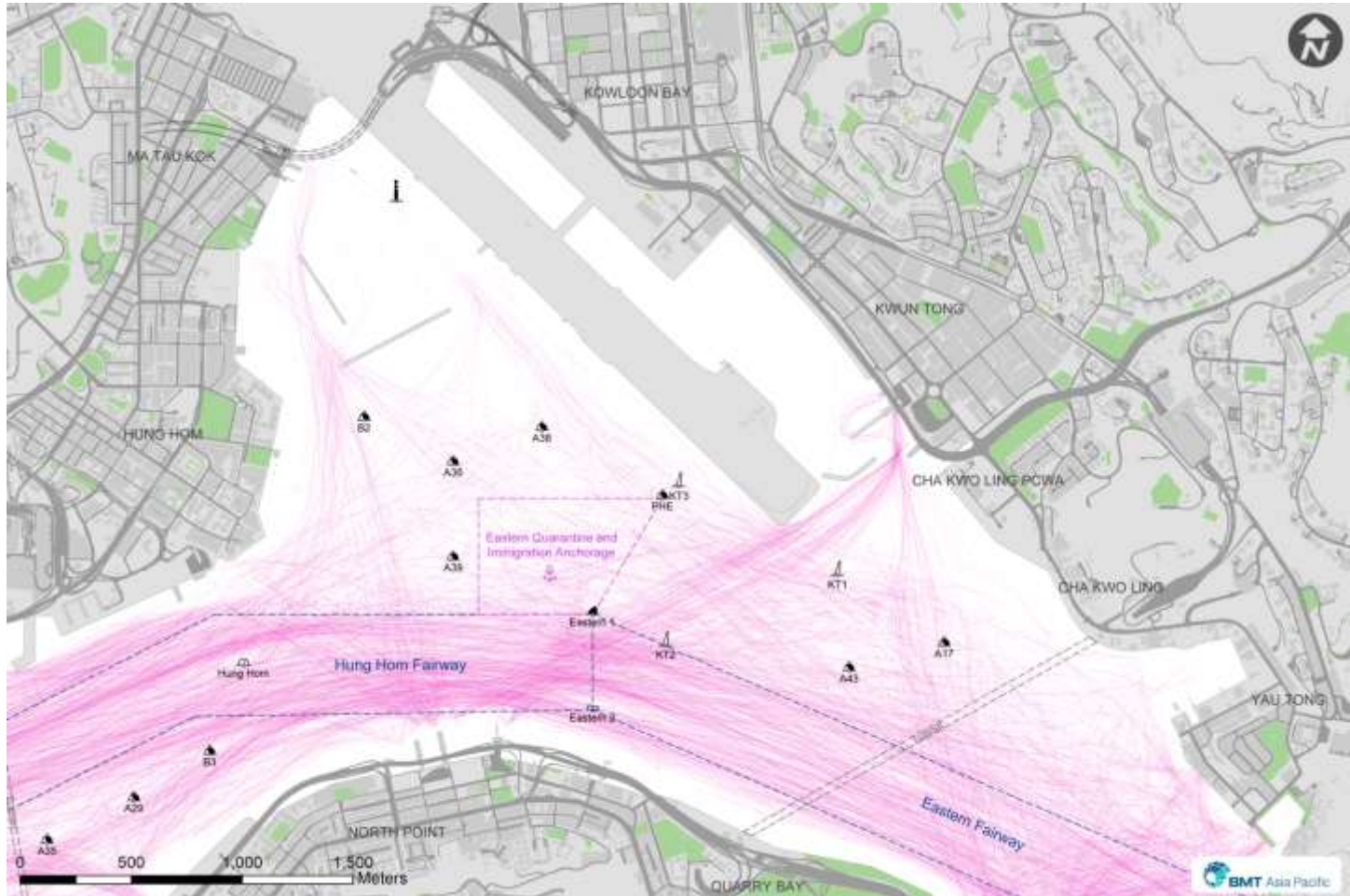
What's left? with a focus on Eastern waters



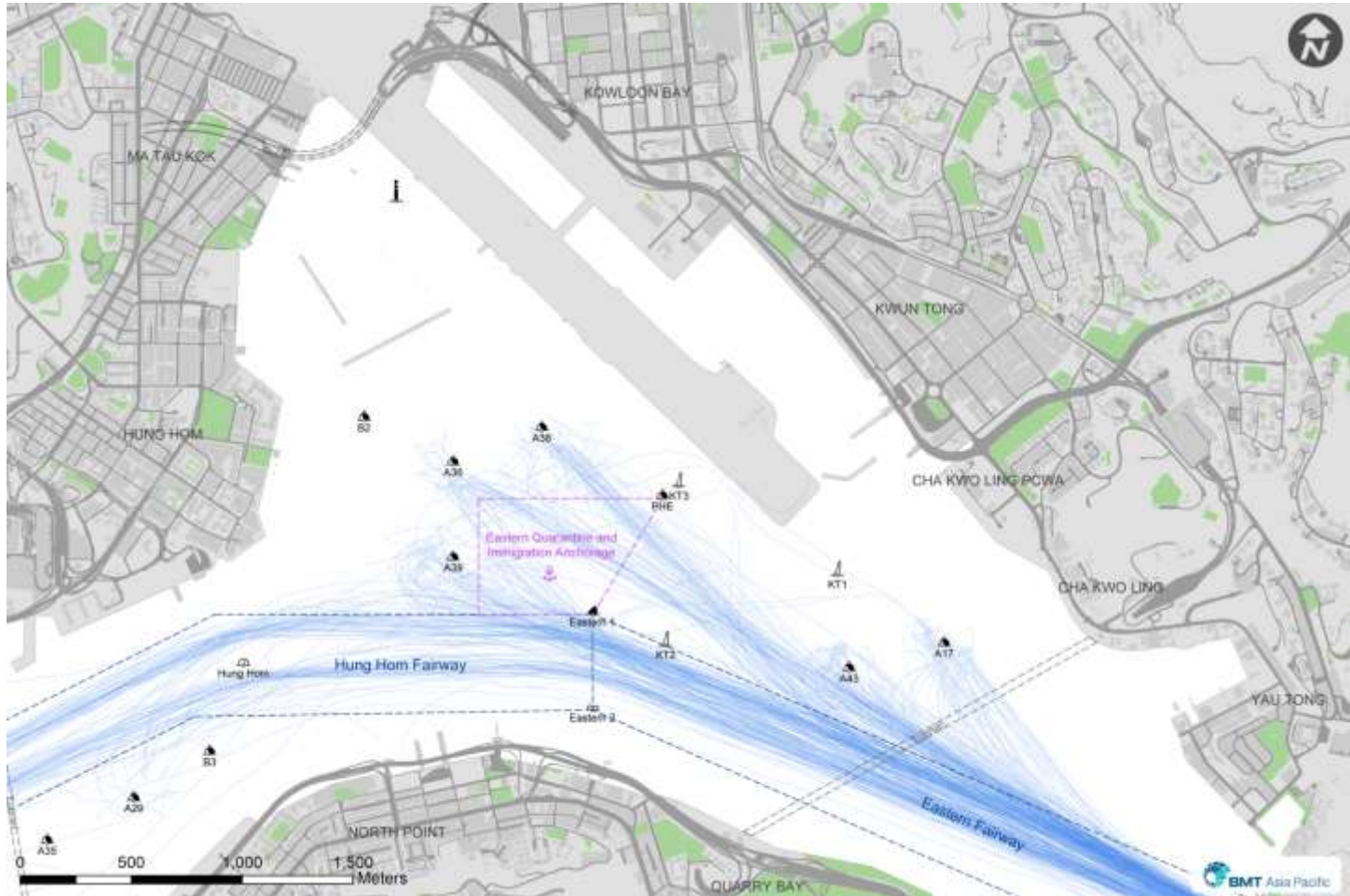
Opportunity Mapping in Kowloon Bay (marine infrastructure)



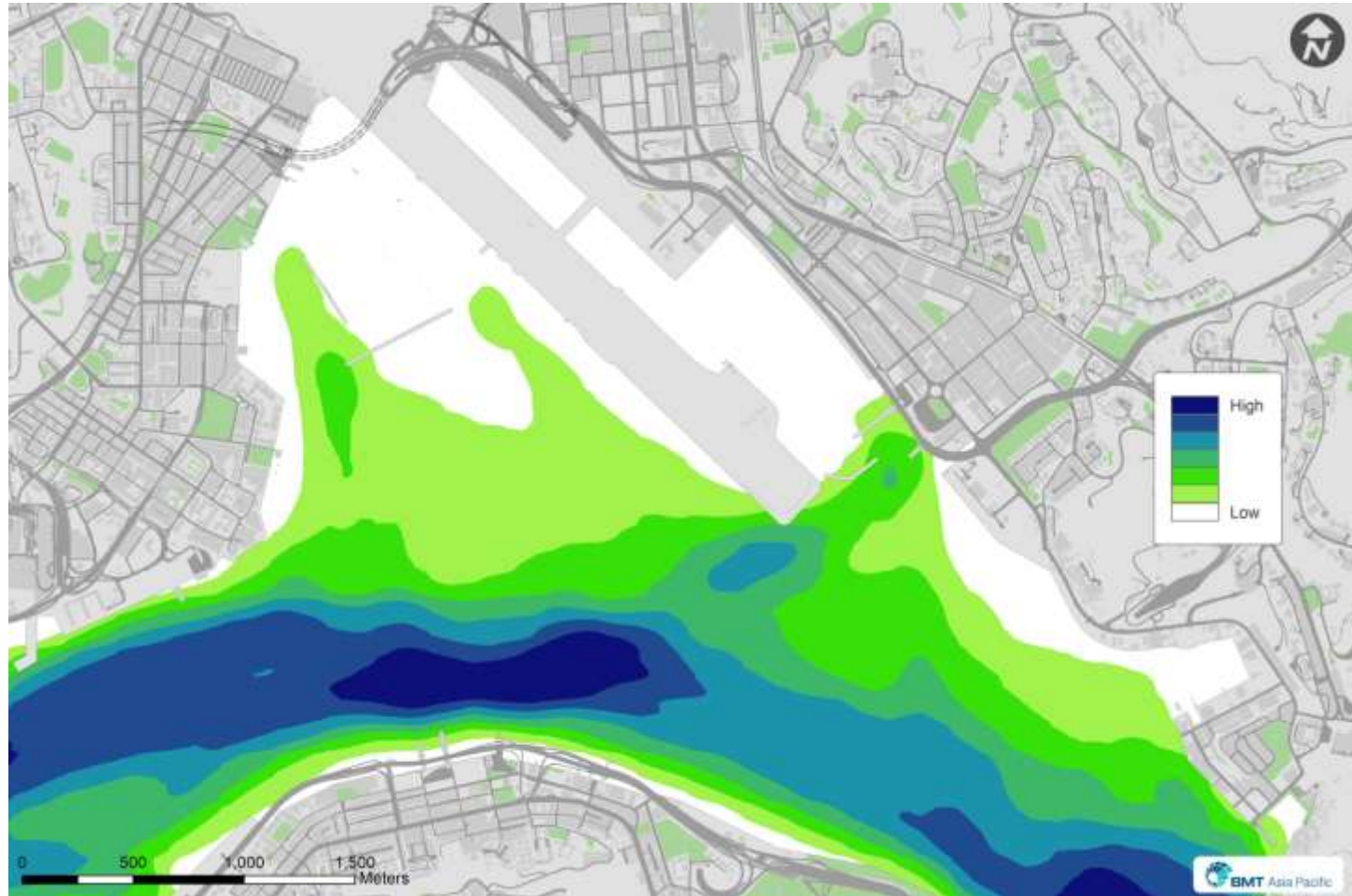
Opportunity Mapping in Kowloon Bay (vessel traffic activity, 1 day)



Opportunity Mapping in Kowloon Bay (ocean-going vessel activity, 1 month)

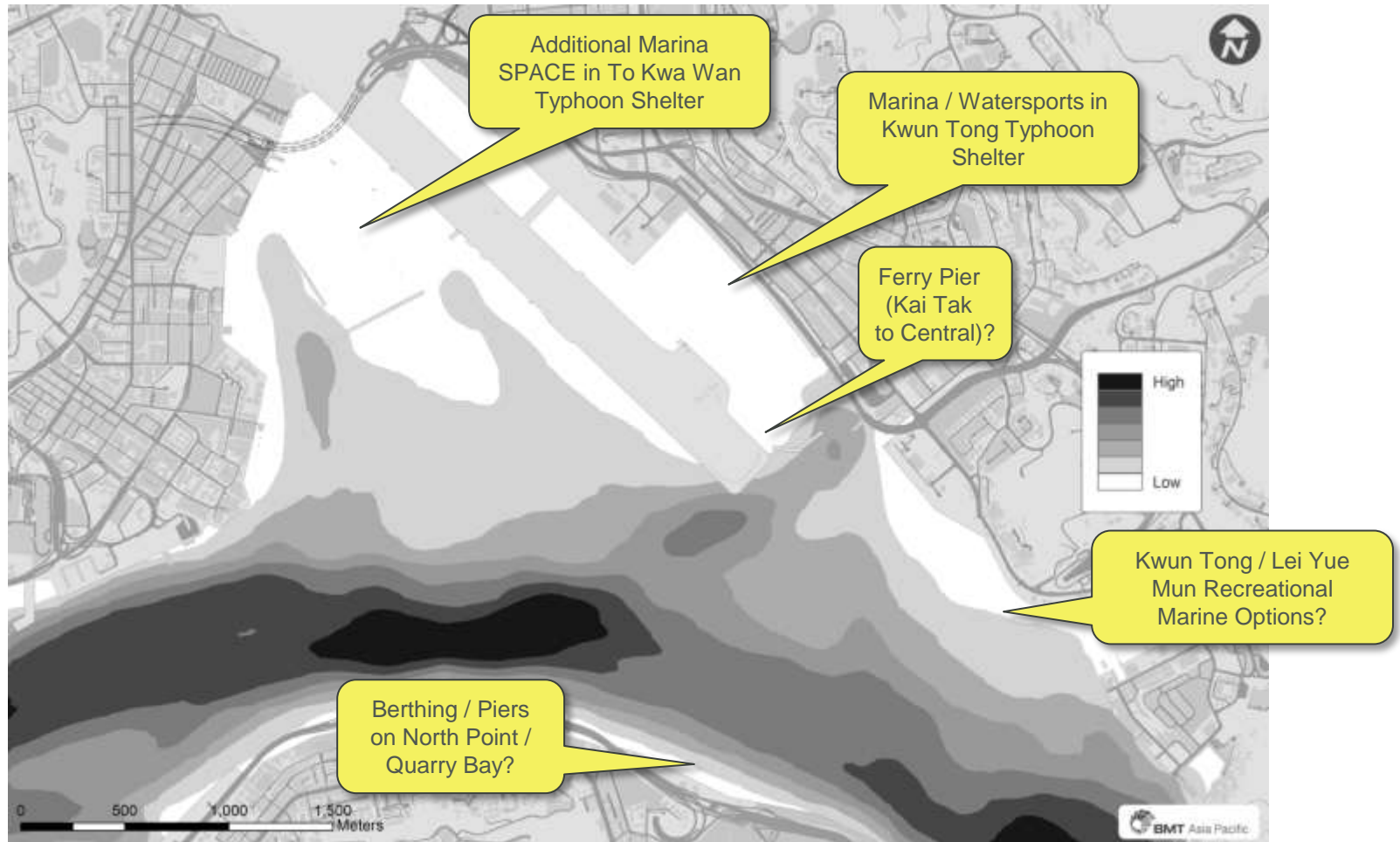


Opportunity Mapping in Kowloon Bay (average traffic density, from 1 day sample)



Opportunity Mapping in Kowloon Bay

Opportunity Spaces?



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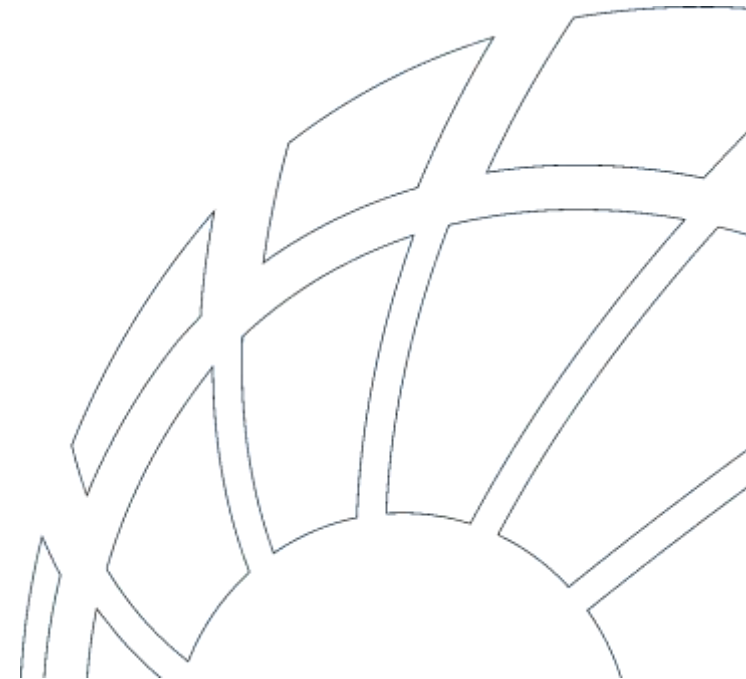
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Summary

Marine Spatial Planning offers an effective framework, but.....

- The focus of the planning process should be on “planning” rather than on producing a “plan.”
- Planners should always keep in mind that their function is to generate information for decisions makers, not to make decisions;
- Stakeholders, including decision-makers, politicians, resource managers, bureaucrats, and the general public need to understand the net benefits of planning for MSP success; and
- Real outcomes, not the process, are the goals of MSP!

Thank You

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