

Watershed Plans and NPSFM Engagement

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23 May 2018

BE THE HOW.
WHAKAMAUA KIA TINA!

Auckland
Council

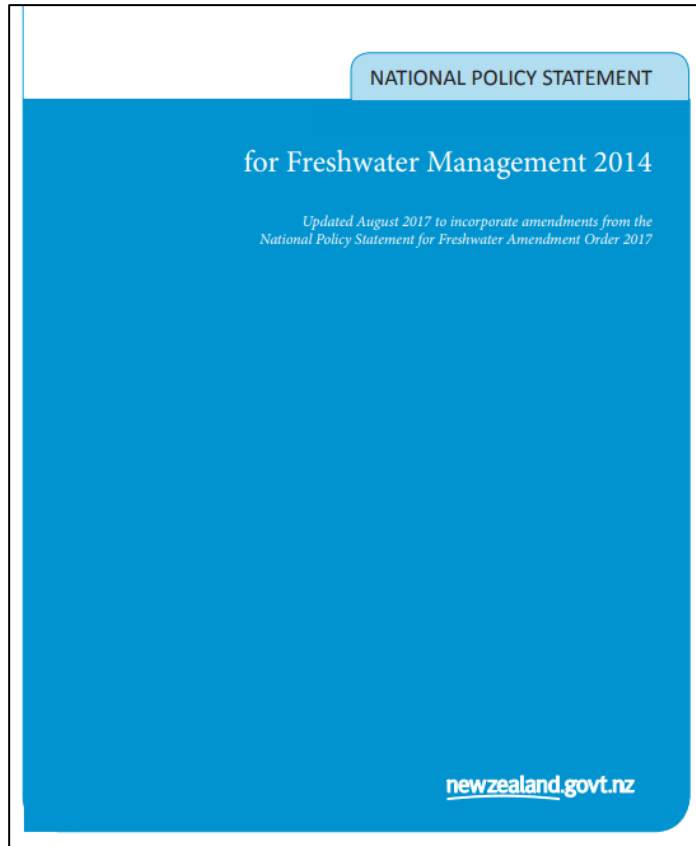
Te Kaunihera o Tāmaki Makaurau



Today's presentation

- NPS-FM implementation through integrated watershed planning
- Engagement in integrated watershed planning
- Challenges for engagement
- Use of GIS-based, interactive watershed plans to support engagement
- Conclusions and lessons learnt

NPS-FM = Changes to AUP-OP



How do we get from here...

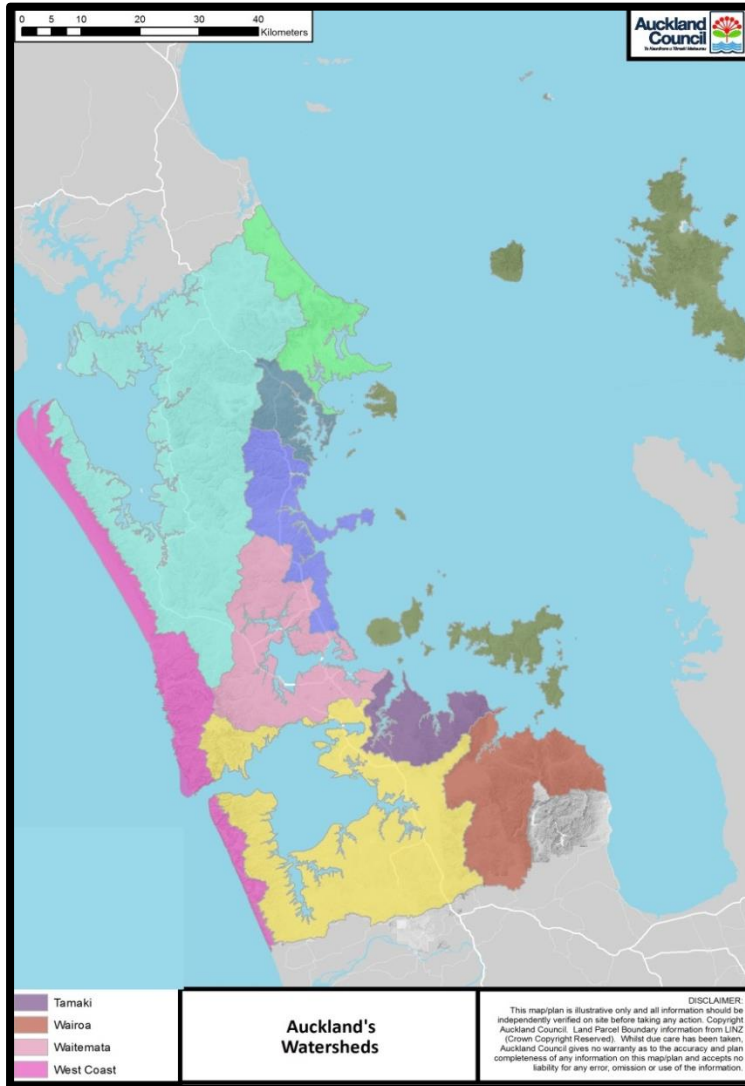


We need to set freshwater values, objectives, limits and/or targets in the AUP-OP



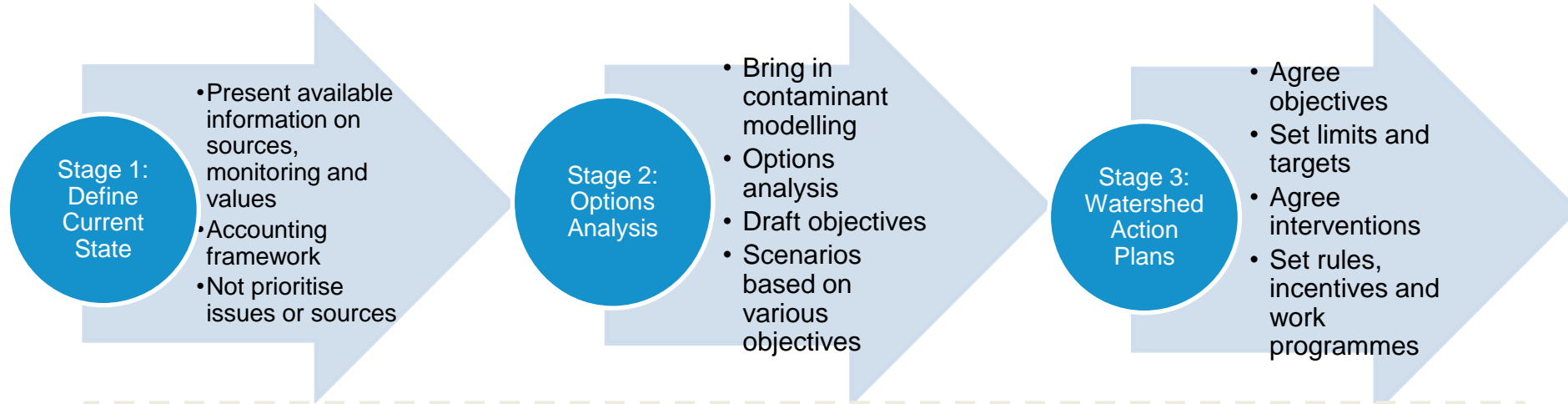
To here...

NPS-FM and Integrated Watershed Planning

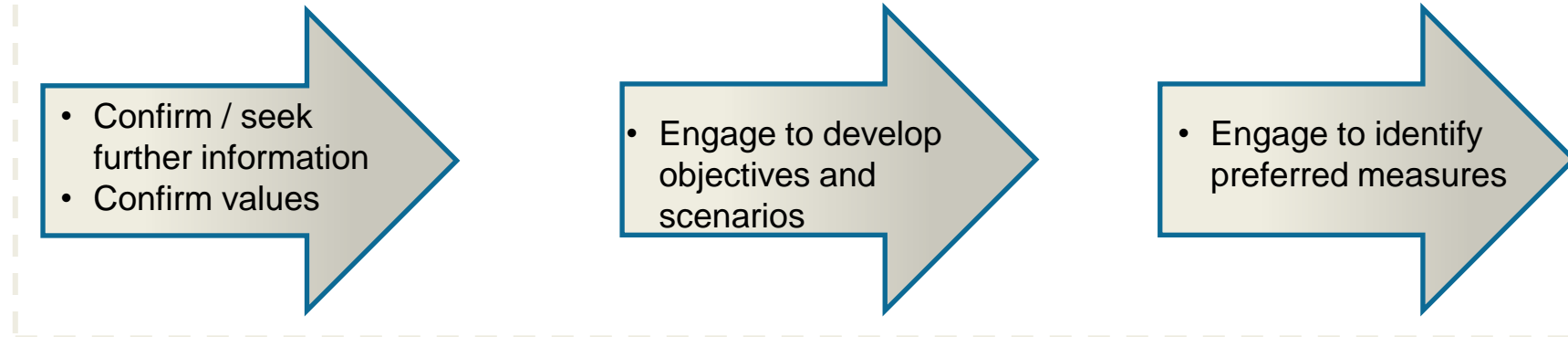


- Integrated Watershed Planning is the process for implementing the NPS-FM
- Uses a shared, holistic planning approach at a “watershed” level
- Ki uta ki tai

Stages of Integrated Watershed Planning



ENGAGEMENT SOUGHT DURING STAGES



Challenges for Engagement

- Number of stakeholders
- Competing priorities
- Uncertainty about the future

Response :
**Interactive watershed plans as a
communications tool**



Auckland's Watersheds: Current State Story Maps

Click on a watershed in the map on the left to go to the Current State Story interest.

It is recommended that you use [Chrome web browser](#) for the best experience.

A watershed is an area of land where all the water drains to a harbour or the sea.

The Current State Story Maps are map-based tools for showing the current state of estuarine and coastal water bodies within each watershed. They are intended to support the management of water across Auckland and fulfilling the requirements of the Resource Management Act 1991 and the Freshwater Management 2017. The Story Maps will be used to support engagement with stakeholders on water values and water management issues.

The Story Maps are under development. We have intentionally published this stage to enable mana whenua and stakeholders to help us with improving our representation of the current state of Auckland's water. We will update content as we progress.

To contact us please call Auckland Council on 09 301 0101 or provide feedback via our website.

Example: Stream and Lake Ecosystems

Current State Overview Ecosystem Health Recreation Current Interventions Resource Use Cultural Health

LEGEND

Lakes

- Inland Water Body
- Lacustrine

Key Streams

Key Rivers

Name Opanuku Stream
Length 12,537 meters

BACK

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Our best available GIS data indicates that Waitematā Harbour watershed contains approximately 1700 km of permanent streams. Roughly 35% of streams are urban with the remainder running through natural forest, exotic forest or rural areas. Click on the Streams and Lakes button below to see the streams and lakes of the Waitematā Harbour watershed.

Streams in natural forest, such as the Waitākere Ranges, generally have good ecosystem health with a diverse range of plant and animal species. Rural and exotic forest streams have more mixed ecosystem health, dependent on the management of surrounding land and the riparian margins of the streams.

Urban streams are generally the most degraded streams in Waitematā Harbour watershed. The highly impervious catchments of urban streams concentrate contaminants and alter the natural flow regime. Urban streams are more likely to receive point source discharges that reduce water quality. Urban streams with preserved riparian margins and that receive few reticulated stormwater and wastewater discharges are likely to retain greater ecosystem values than those that are more highly modified by urban activities.

Western Springs is the only significant lake in Waitematā Harbour watershed. It is an urban lake that receives most of its water from groundwater springs. The lake's ecosystem is impacted by increased nutrient loads from the groundwater entering the lake, and can have high levels of algae and turbidity. Despite these impacts, it supports a diverse range of native and exotic animal and plant species. Several bird species can be found on and around the lake.¹

Streams and lakes

Wetlands

Click on the wetlands button below to see the natural wetlands in Waitematā Harbour watershed. Natural wetlands have substantial ecosystem value. We currently do not know much about the state of wetland ecosystems in the watershed.


There are also a number of constructed wetlands in Waitematā Harbour watershed. These are not mapped at present but we will update this section with information about constructed wetlands in the watershed in

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POWERED BY
Earthstar Geographics, CNES/Airbus DS esri

Example: Effects of Sediment on Ecosystems

Current State Overview **Ecosystem Health** Recreation Current Interventions Resource Use Cultural Health



Facebook Twitter Link



Sediment and ecosystem health

Excessive fine sediment suspended in the water or deposited on stream and river beds can adversely affect ecosystem health¹⁷. Excess sediments can cause damage by blocking light that aquatic plants need to grow. It can also smother a range of organisms that live in our waters. Where sedimentation is very bad, it can cause long-term change to the types of shellfish and other organisms that live in our waters.

Sediment entering our waters is a natural process. However activities in both urban and rural areas can increase the volume of sediments entering and depositing into our streams and coastline if they are not well managed.

Photo credit: Adele Krantz

Indicators of sediment

Please wait for map to load

Turbidity

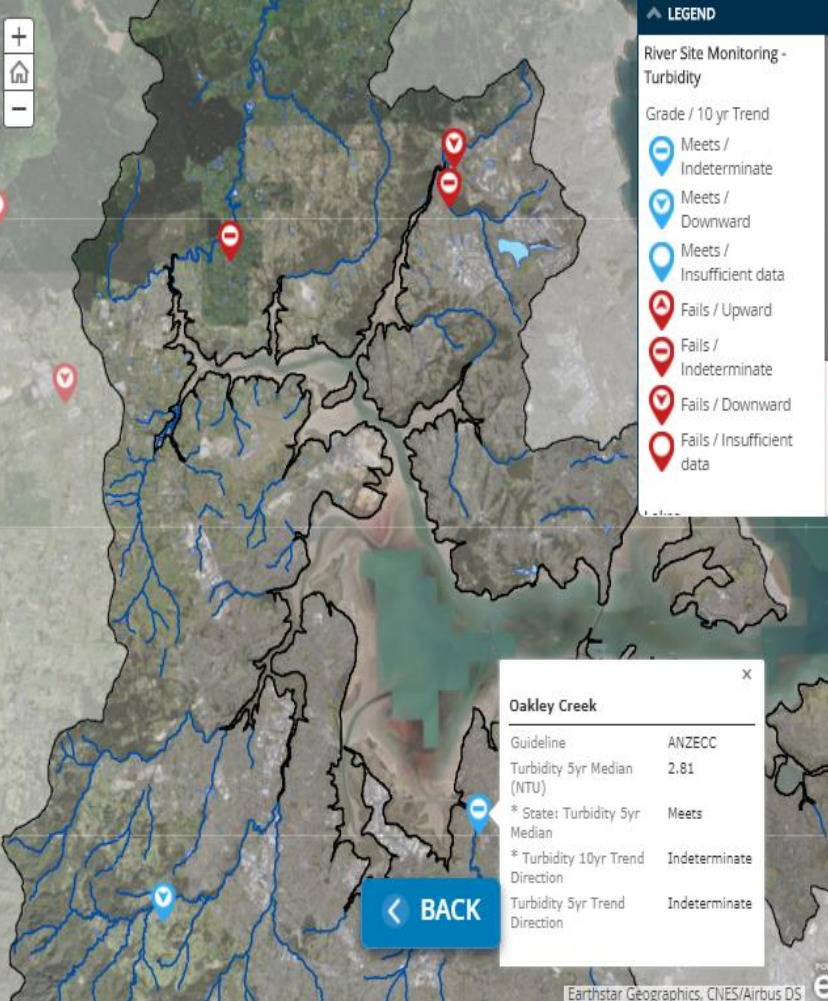
Turbidity is an indicator of the amount of suspended sediment in water. Sites with high turbidity are more likely to be affecting water ecosystems.

The map opposite shows the median turbidity of monitored streams in the Waitematā. Sites with red markers have high turbidity (poor water clarity).

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Example: Explore Relevant Data

Current State Overview Ecosystem Health Recreation Current Interventions Resource Use Cultural Health



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Indicators of sediment

Please wait for map to load

Turbidity

Turbidity is an indicator of the amount of suspended sediment in water. Sites with high turbidity are more likely to be affecting water ecosystems.

The map opposite shows the median turbidity of monitored streams in the Waitematā. Sites with red markers have high turbidity (poor water clarity).

Turbidity

Suspended solids

Sites with high levels of suspended solids are more likely to be affecting water ecosystems. Turbidity can be used to estimate the amount of total suspended solids (TSS).

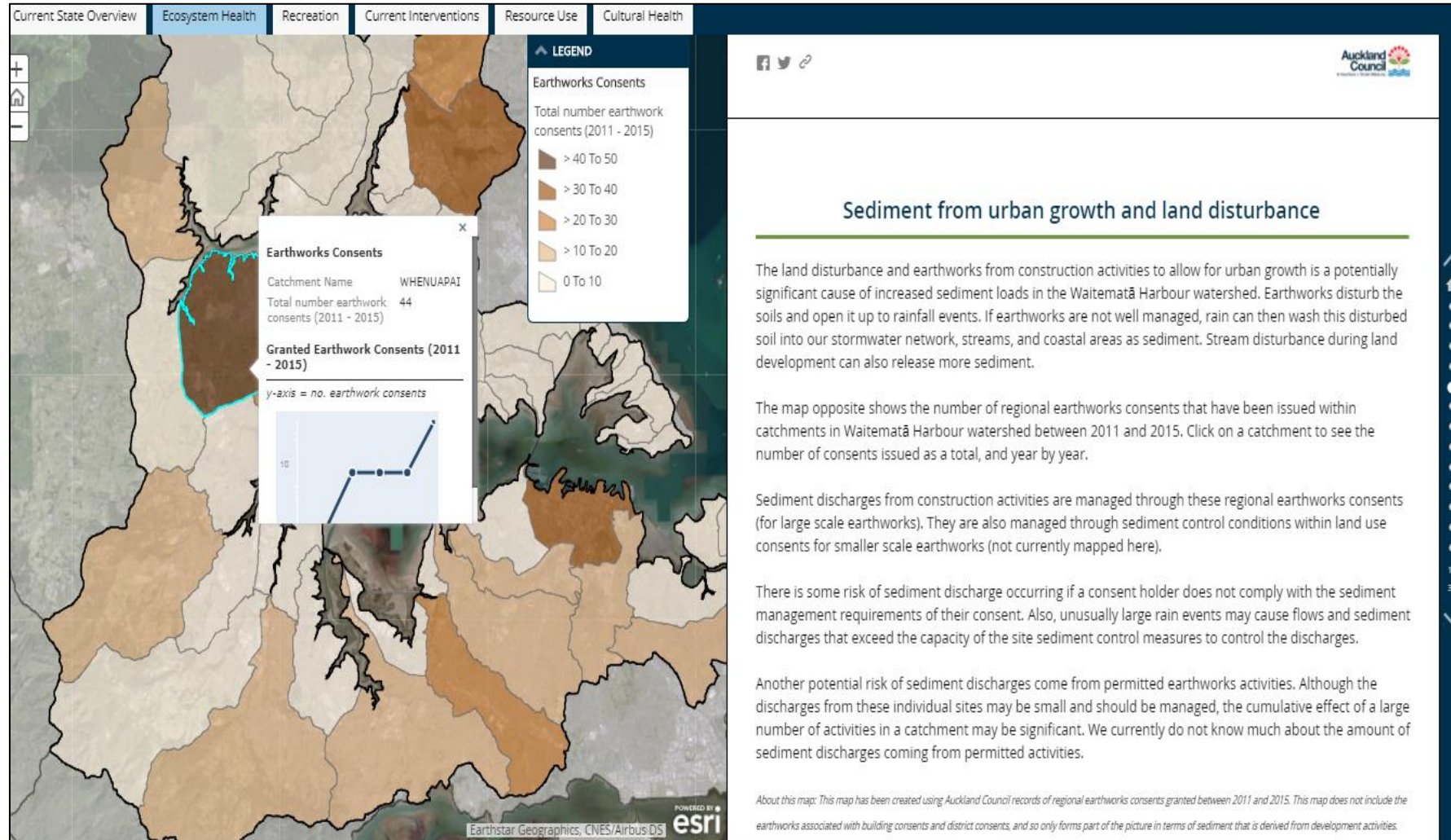
The map opposite shows the average total suspended solids levels of monitored sites in Waitematā Harbour watershed. We do not yet have a standard to compare TSS levels to. Therefore the sites are not colour coded.

Total Suspended Solids

Deposited sediment

The deposition of fine sediment onto the bottom of streams and into estuaries and coastal areas can smother benthic invertebrates and impact other aquatic fauna like fish.

Explaining Causes of Issues



Conclusions

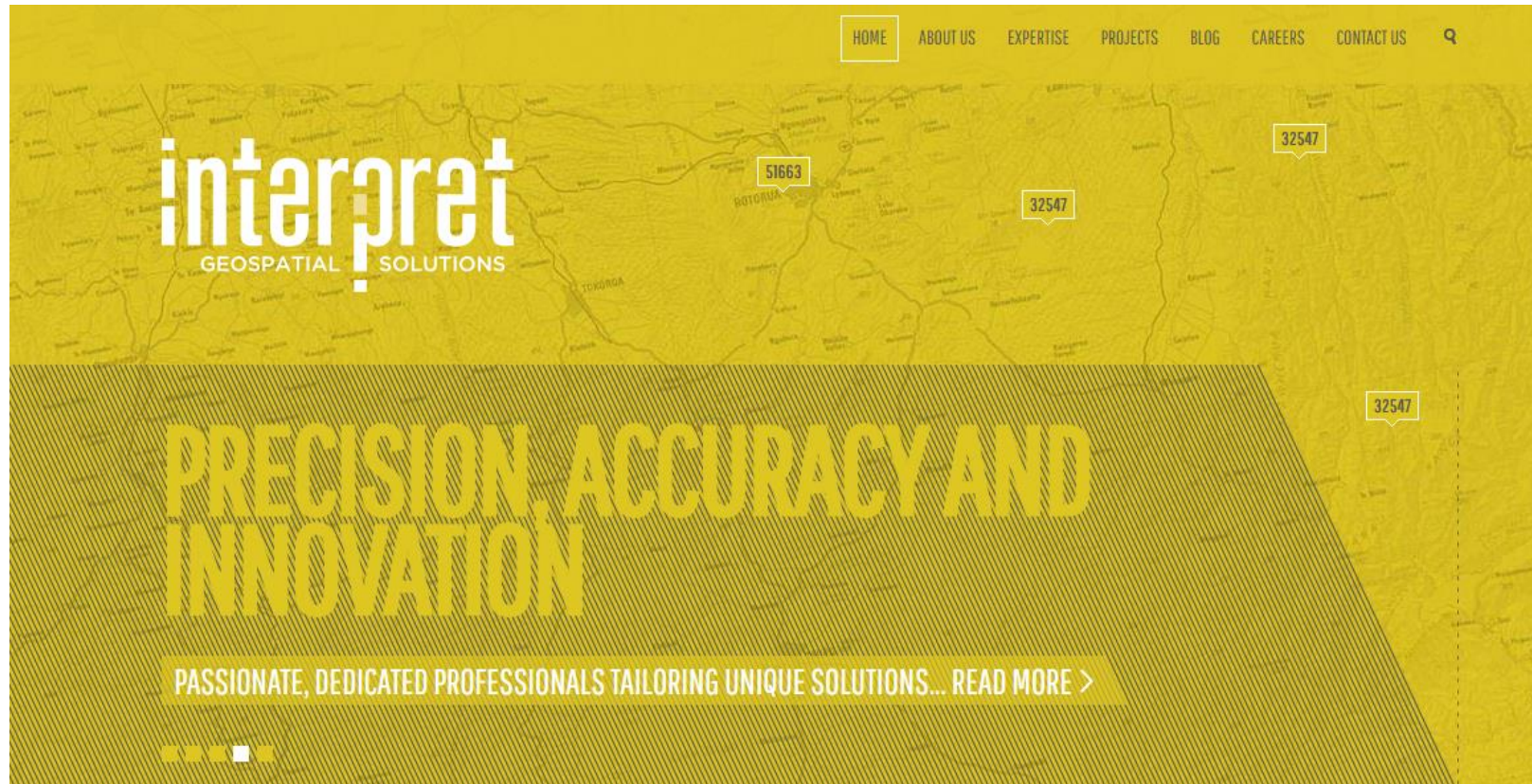
- Better information accessibility
- Improved stakeholder interest and understanding
- Reduced need to resolve conflicts in viewpoints
- Ability to respond quickly to change
- Ability to communicate change transparently
- Ability to integrate large volumes of information in one place

Lessons Learnt

- Establish the main project drivers
- Keep project team consistent
- Scope on paper

Acknowledgement

- Interpret Geospatial Solutions



Questions?