



Environment and  
Climate Change Canada

Environnement et  
Changement climatique Canada

# GOES DCS TWG USER REPORT:

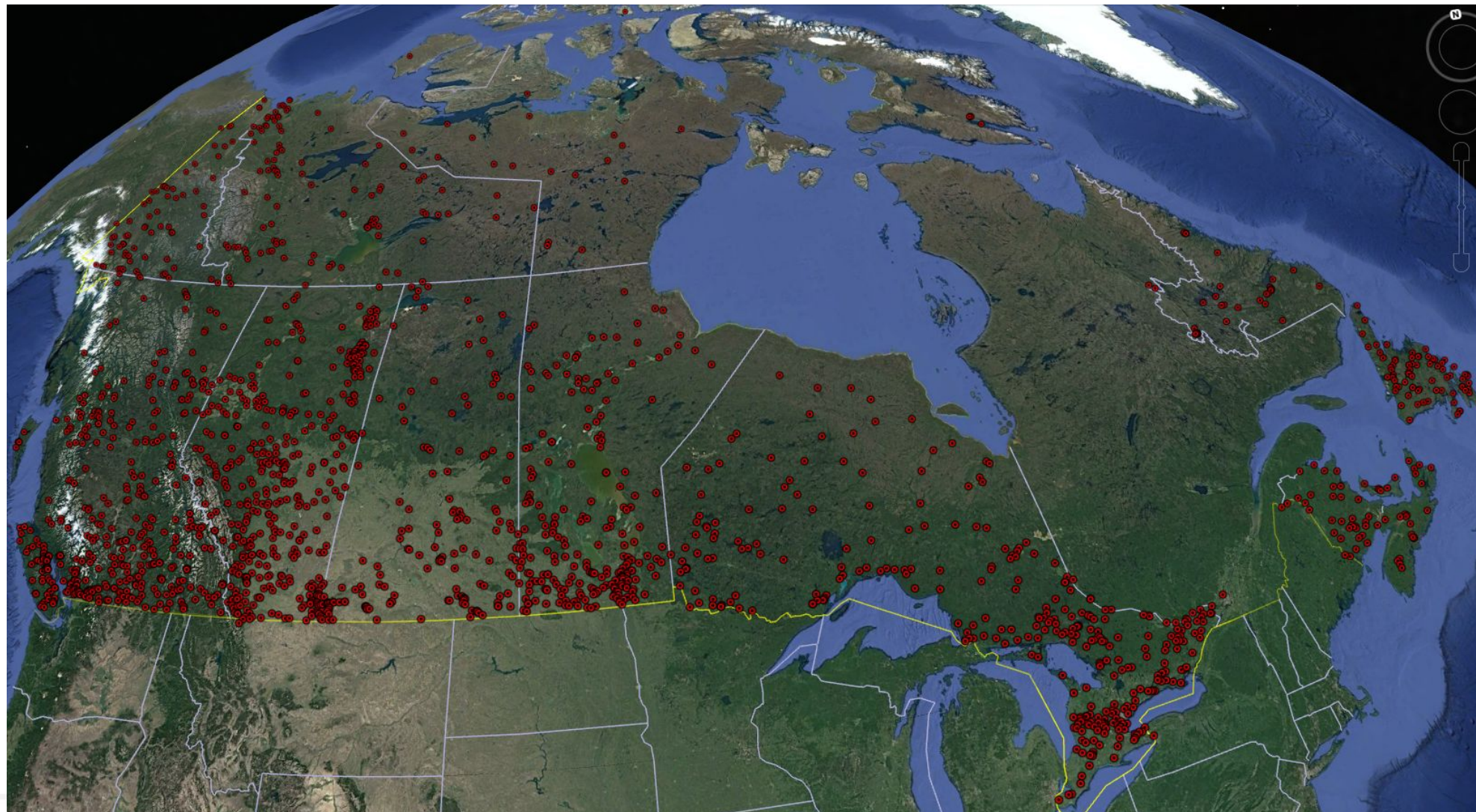
APRIL 28, 2021

PAUL CAMPBELL



Canada 

# NHS STATIONS

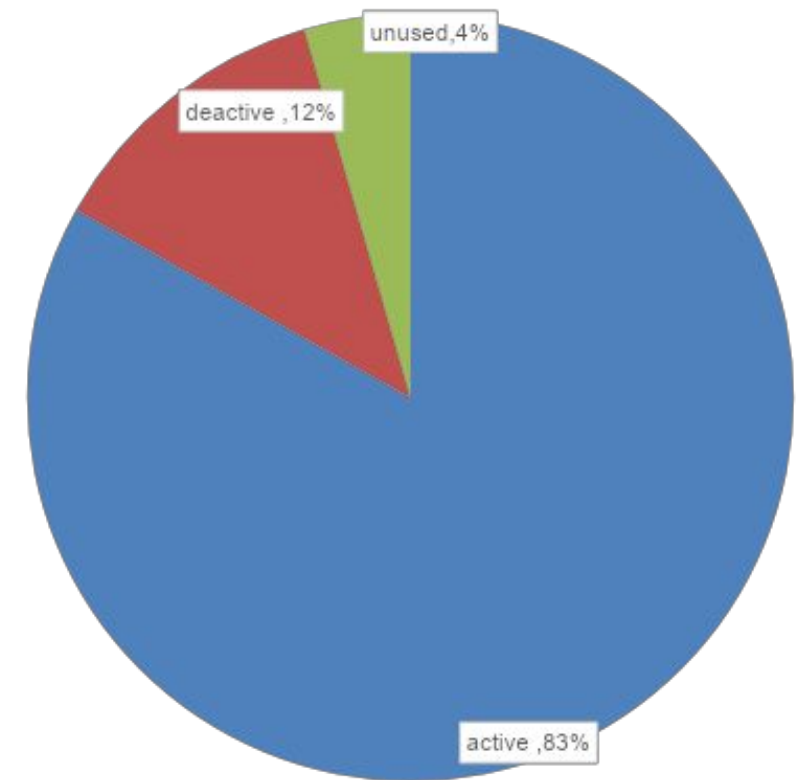


# SUMMARY: WATER SURVEY OF CANADA (NATIONAL HYDROLOGICAL SERVICE) AND METEOROLOGICAL SERVICE OF CANADA

Network	total	active	deactive	unused
WSC	2131	1746	260	94
MSC	225	86	123	15

%CS1	%CS2
22	78

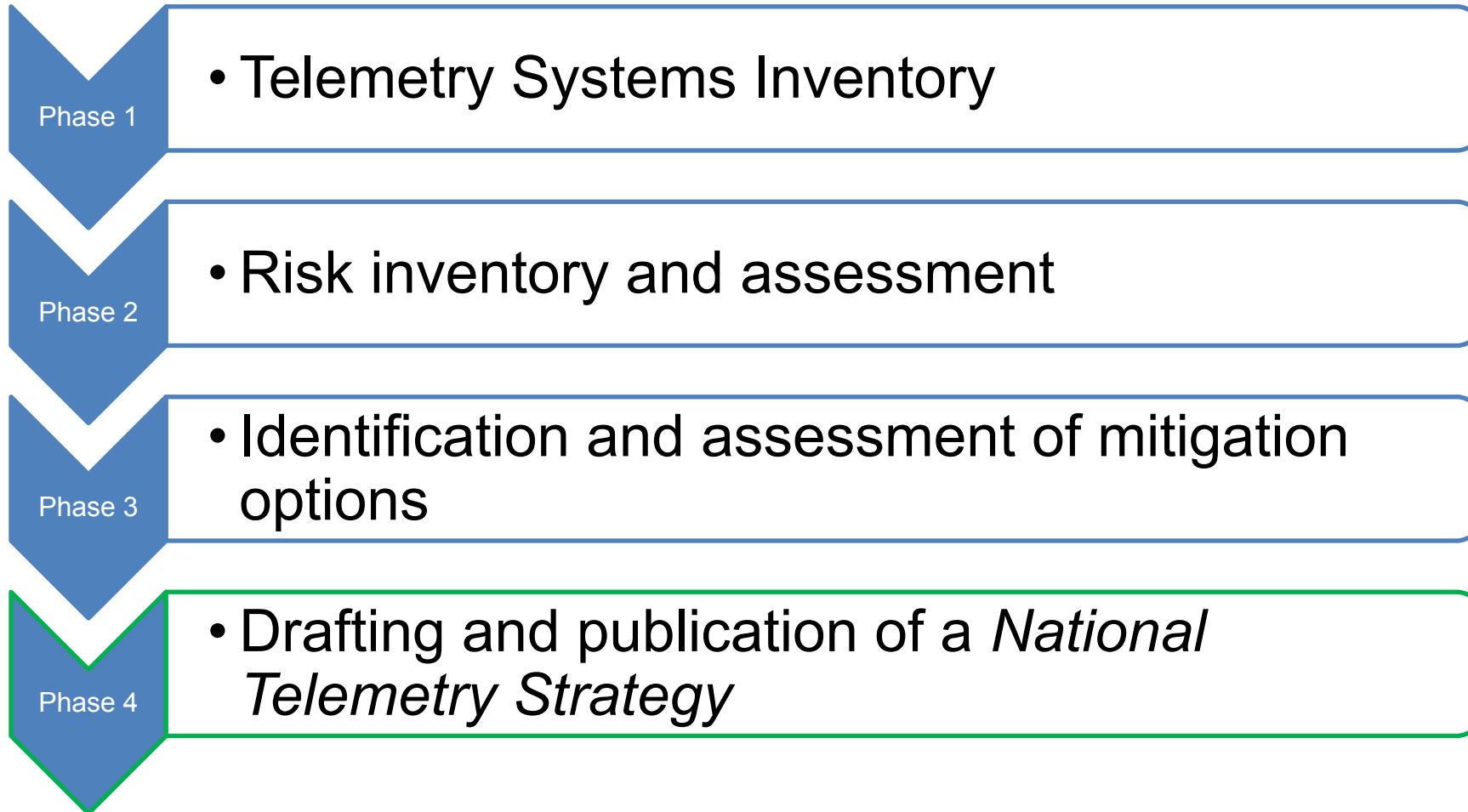
Water Survey of Canada DCPs  
■ active ■ deactive ■ unused



# CANADIAN COUNCIL FOR WEATHER AND CLIMATE MONITORING (CWAC) INTERESTED IN REDUCING TELECOMMUNICATION RISKS.

- January 2020 CWAC meeting
  - Members concerned about risks to Water, Weather & Climate data availability related to telemetry systems
  - Action: *“Investigate the need for a strategy on telecommunication/transmission of data for networks across the country”*
- The WG will:
  - Inventory and assess risks and mitigation options for telemetry systems
  - Develop a *National Telemetry Strategy* outlining a risk management strategy to guide future management of and investments in telemetry systems for Water Weather & Climate networks
- Currently has members from ECCC, Provinces of British Columbia/Saskatchewan/Manitoba/New Brunswick/Newfoundland and Labrador. Yukon

# Project Phases

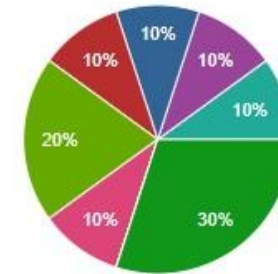


# Phase 1: Telemetry System Inventory

- Identify telemetry systems currently in use by WW&C monitoring networks
  - e.g. cellular networks, GOES Data Collection System (DCS)
- Identify alternative telemetry systems (current and future)

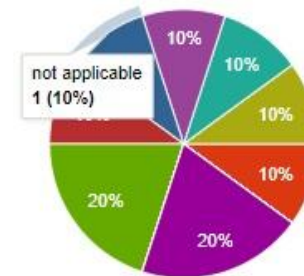
For the most common combination of redundant telemetry options, what is considered the primary option?

10 responses



For the most common combination of redundant telemetry options, what is considered the secondary option?

10 responses



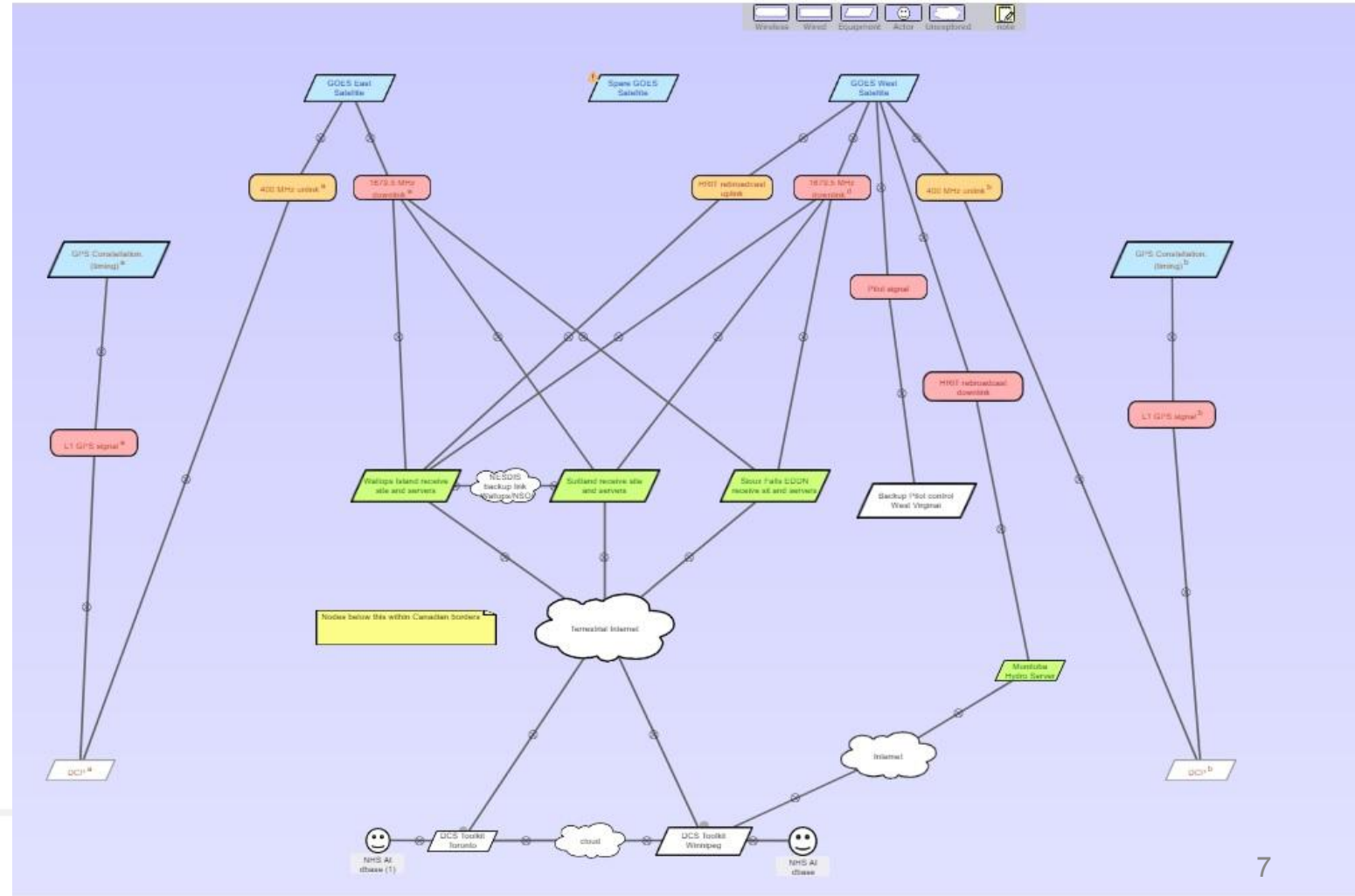
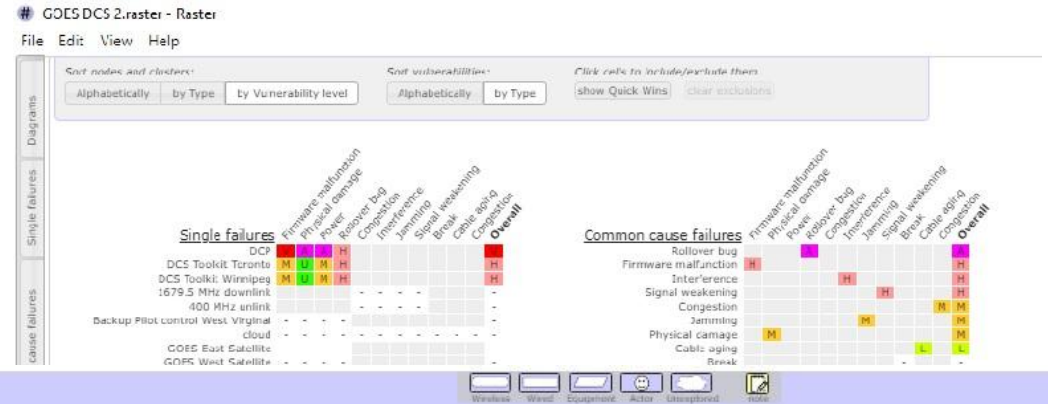
Indicate the reasons for adding a redundant telemetry options?

10 responses



# Phase 2: a) Risk Inventory

- Catalog risks for each telemetry system
  - Types of risks: Hardware, Software, Organizational, Natural hazards and other external stressors



# Phase 2: b) Risk Assessment

- Characterize the *risk exposure* of all identified risks
  - i.e. define the magnitude of a risk based on assessed values of:

## Likelihood

- Probabilities, heuristics converted into estimates
- Expert ranking of risks (v. low, low, medium, high, v. high)

## Impact

- What are the consequences of lost data?  
Is it a question of reliability (fail or no fail?) or resiliency (out for how long?)

## Timeframe

- How soon is the risk likely to be realized?
- How soon do you need the system back? (Resiliency)



# Phase 3: Identify and Assess Risk Mitigation Options

- Identify mitigation options
- Assess mitigation options
  - Evaluate effectiveness of mitigation options
  - Assess relative costs (financial and non-financial) of implementation

# Phase 4: A National Strategy

- Report on the outcomes of Phases 1 to 3
- Define and present a risk management strategy that will guide future management of and investments in telemetry systems for water, weather and climate networks
- Open to suggestions for consultants on cellular, internet, satellite communication resiliency