

# Athabasca Watershed Council

Athabasca Watershed Planning and Advisory Council



Water for Life

# *Water for Life*

## ***Alberta's strategy to achieve:***

- ✓ Safe, secure drinking water supply
- ✓ Healthy aquatic ecosystems
- ✓ Reliable, quality water supplies for a sustainable economy

## ***Calls for multi-sector Watershed Planning and Advisory Councils to complete:***

- ✓ Watershed health assessment - State of the Watershed Report
- ✓ Watershed management planning and Stewardship – Integrated Watershed Management Plan
- ✓ Fill information gaps
- ✓ Make recommendations to decision-makers at multiple levels

# Athabasca Watershed Council

**Vision:** The Athabasca watershed is ecologically healthy, diverse and dynamic.



# Athabasca Watershed Council

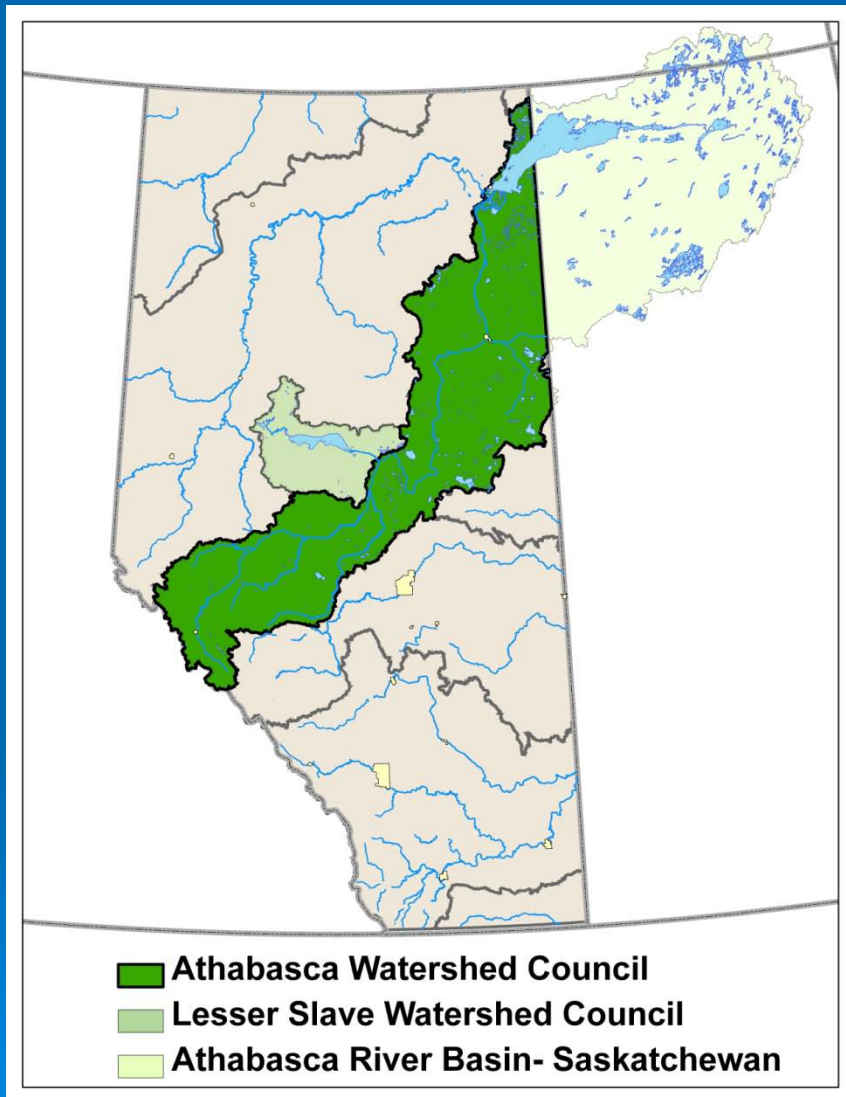
## **Mission:**

to promote, foster respect and plan for an ecologically healthy watershed by demonstrating leadership and facilitating informed decision-making to ensure environmental, economic and social sustainability.





# Athabasca Watershed



Athabasca Watershed in Alberta, Sask. and N.W.T.



Mackenzie River Basin and Sub-Watersheds

# Athabasca Watershed Council

## Multi-sector representation:

- Government (3 levels)
- Aboriginal (FN & Métis)
- Non-Gov't organizations
- Industry
- Other (members at large)





# Athabasca Watershed Council

## Goal:

- Ensure the Athabasca Watershed Council is an effective, efficient and sustainable Watershed Planning and Advisory Council.



# Athabasca Watershed Council

- **Goal:**
- **Improve watershed knowledge and understanding within the Athabasca Watershed Council.**





# Athabasca Watershed Council

- **Goal:**
- **Champion increased awareness by providing information and education to all.**



# Athabasca Watershed Council

- **Goal:**
- **Encourage and work towards protection, conservation, and enhancement of the ecological integrity of the watershed.**



# Athabasca Watershed Council

- **Goal:**
- **Facilitate development and implementation of integrated planning for the watershed.**





# Athabasca Watershed Council

## ➤ Goal:

**Promote best practices to help achieve healthy aquatic ecosystems, safe and secure drinking water supplies and reliable quality water supplies for a sustainable economy.**



# Athabasca State of the Watershed Report – Phase 2

- Five Criterion
- 32 Pressure and Condition indicators
- 18 Aspirational indicators
  - (data needed in the future)

**Table 2.** Pressure and conditions indicators selected to assess the current state of the Athabasca Watershed.

Criterion 1. Conservation of Biological Diversity	
Road Density	Pressure
Seismic Line, Pipeline, Power Line & Railroad Density	Pressure
Large Patches of Natural Vegetation	Condition
Stream Connectivity	Pressure
Fish Community*	Condition
Aquatic Bird Community*	Condition
Amphibian Community*	Condition
Macroinvertebrate Community*	Condition
Mammal Community*	Condition
Rare Species*	Condition
Focal Habitat Condition*	Condition
Wetland Condition and/or Rate of Loss*	Condition
Criterion 2. Maintenance of Surface Water Quality	
Stream Crossing Density	Pressure
Surface Water Quality	Condition
Point Source Contamination	Pressure
Non-point Source Contamination	Pressure
Lake Trophic Status*	Pressure
Riparian Condition*	Pressure
Sediment Quality*	Condition
Water Clarity*	Condition
Acid Sensitive Lakes*	Pressure
Criterion 3. Maintenance of Ecologically Significant Water Levels & Flows	
River Water Flow	Pressure
Potential Surface Water Use	Pressure
Lentic Water Availability*	Pressure
Criterion 4. Maintenance of Groundwater Quality and Quantity	
Potential Groundwater Use	Pressure
Groundwater Quality*	Condition
Criterion 5. Maintenance of Watershed integrity	
Human Population Growth	Pressure (Trend)
Human Land Use	Pressure
Land Conversion	Pressure (Trend)
Changes in Climate Regime*	Pressure (Trend)
Surface & Subsurface Mining*	Pressure
Traditional Land Use*	Pressure

\*Aspirational indicators

# Watershed-wide assessments

- Pressure Ratings – for indicators with science-based thresholds
- Disturbance Classification – for indicators without science-based thresholds; determined statistically (Jenks classification)





# Scale – Pressure & Disturbance Assessments

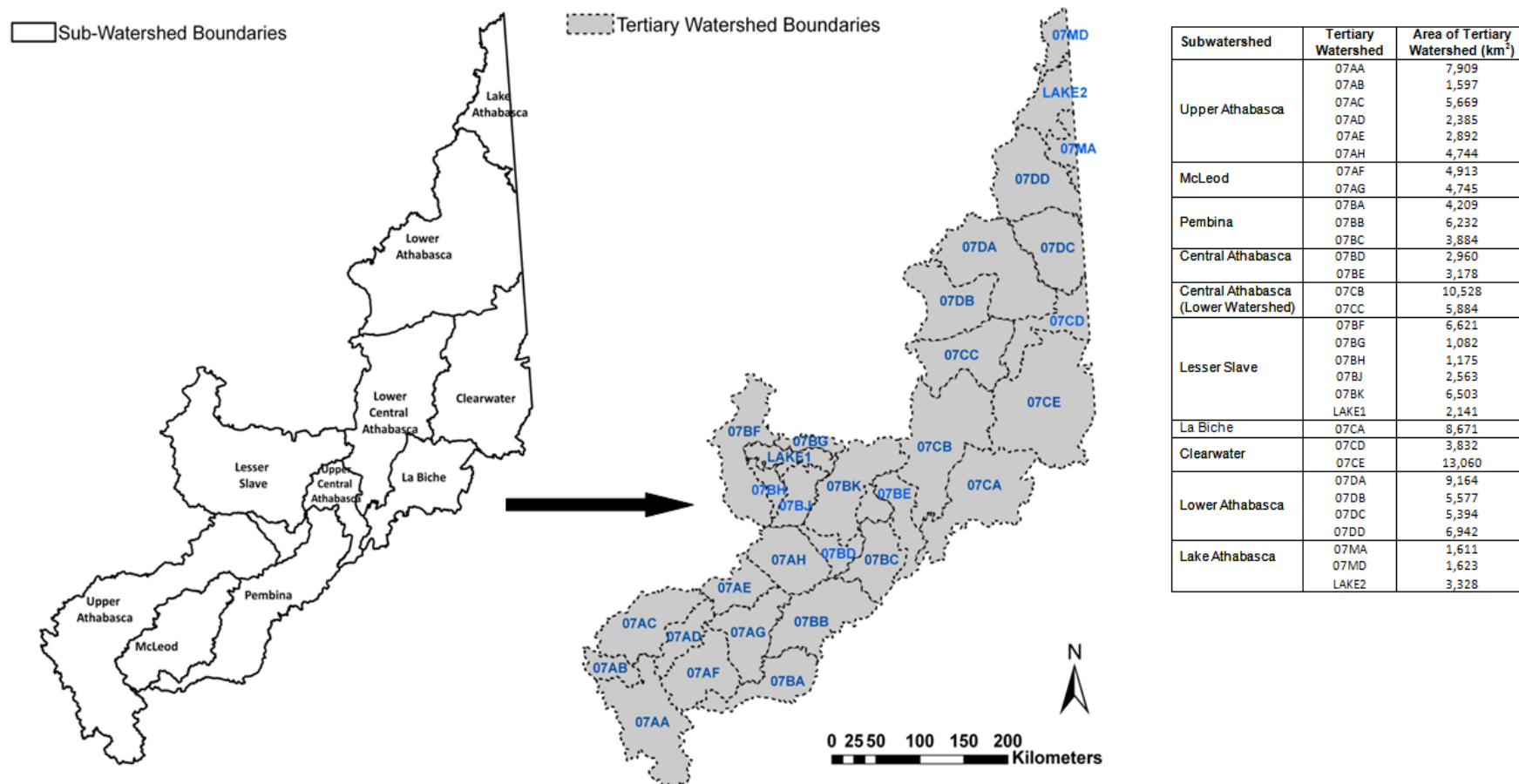


Figure 2. Map of the 10 subwatersheds and 31 tertiary watersheds in the Athabasca Watershed. The tertiary watershed was used as the unit of analysis for all modeling and mapping completed for this assessment.

# Road Density Pressure Rating

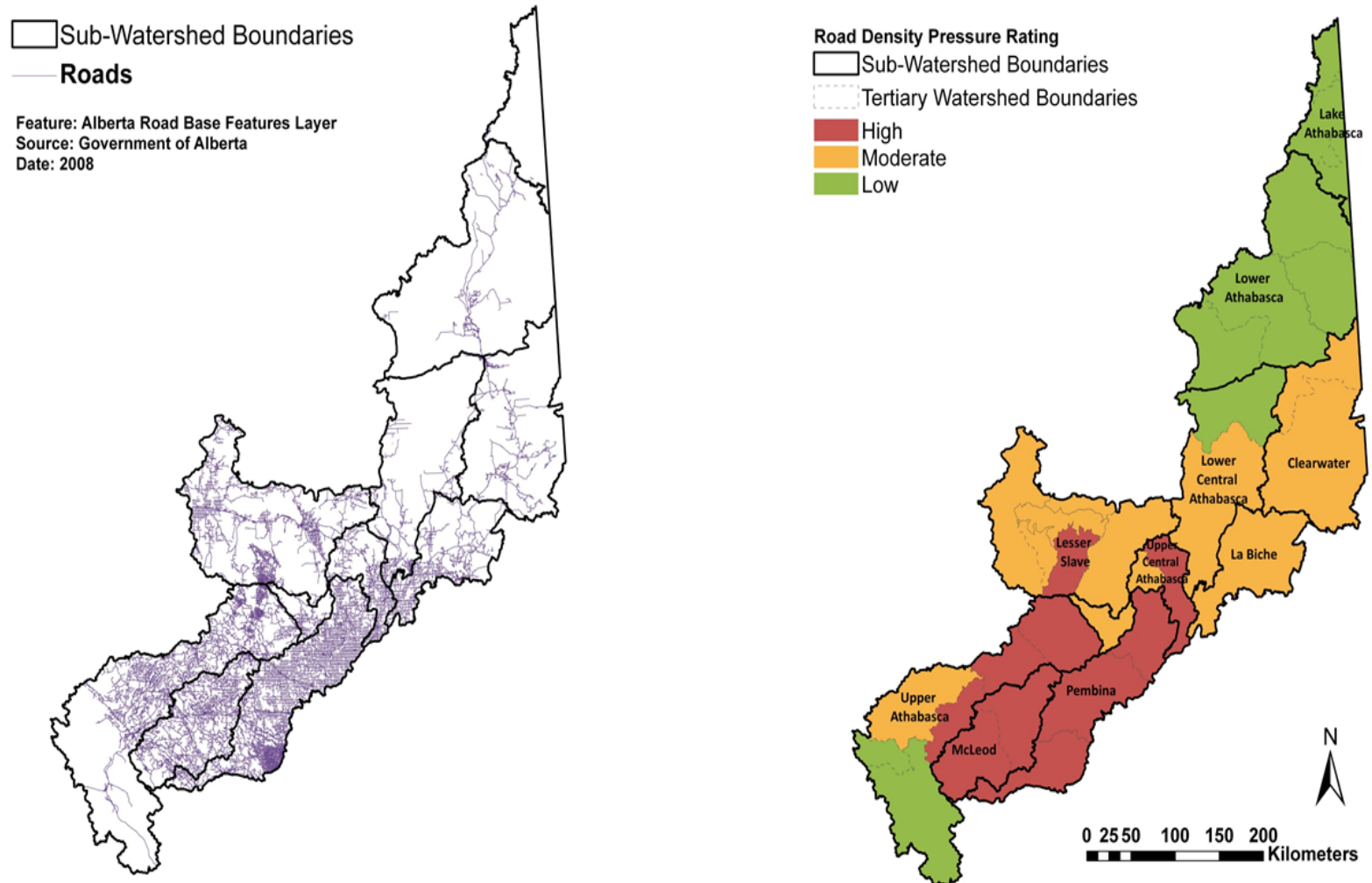


Figure 3. Input data used in the data modeling and pressure rating results for the Road Density indicator. The Government of Alberta base feature road layer (Left Panel) was used to model and rate the road density based on scientific thresholds (Right Panel).

# Potential Surface Water Use Relative Disturbance Classification

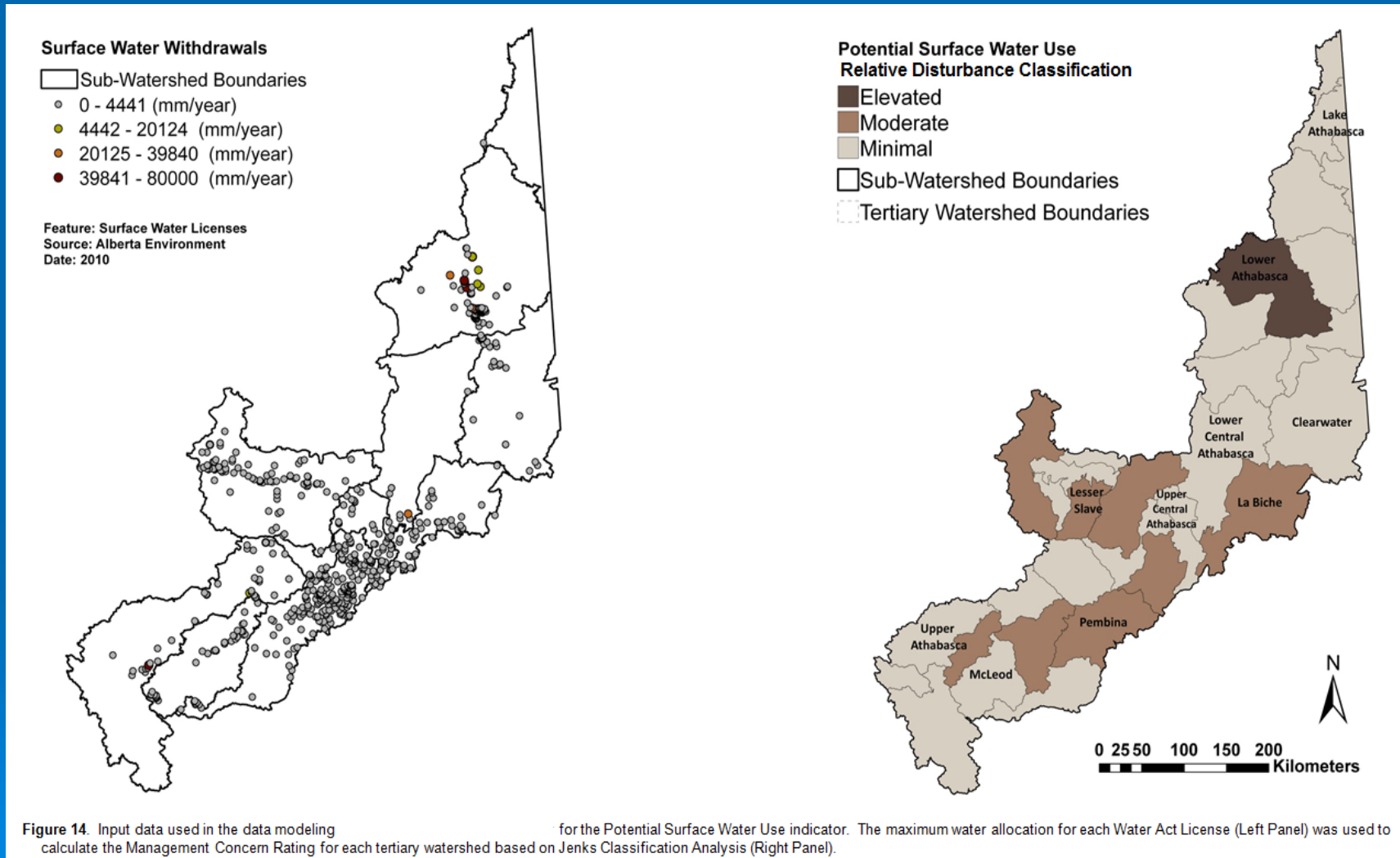


Figure 14. Input data used in the data modeling for the Potential Surface Water Use indicator. The maximum water allocation for each Water Act License (Left Panel) was used to calculate the Management Concern Rating for each tertiary watershed based on Jenks Classification Analysis (Right Panel).



# What's next for the Athabasca Watershed Council 2012-13

- Continue to strengthen administrative capacity as a foundation for the work of AWC-WPAC;
- Develop funding and partnership strategies for key projects (local and traditional ecological knowledge; communications; cumulative effects trend mapping);
- Continue to build on the State of the Watershed Report – both whole and sub-watershed health assessments, with an understanding of pressure, trend and condition indicators to better inform watershed citizens, municipal/regional planning processes, and the GOA
- Athabasca Aboriginal Traditional Ecological Knowledge Report – State of the Watershed Report

- Work towards cumulative effects assessments, including future development assessments and scenarios to better inform future municipal/regional watershed and water management decisions;
- Engagement of the greater watershed community (all who live, work and play in the Athabasca watershed) to provide input to a needs assessment for the Athabasca Integrated Watershed Management Plan



# AWC-WPAC partnership with ARBRI

- Western Science - water and watershed science and technology – rigour and credibility
- Social Science – community and sector engagement - design planning and implementation for the Athabasca IWMP
- Athabasca Traditional Ecological Knowledge – aboriginal community engagement and meaningful inclusion



# Thank You

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*Working from the mountain headwaters...  
to the delta lowlands*

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