

CALIFORNIA COASTAL COMMISSION

SEA LEVEL RISE PLANNING

ADAPTATION STRATEGIES FOR AGRICULTURAL LANDS

Humboldt Bay, CA
Adapting to SLR on
Humboldt Bay's
Agricultural Lands

6/13/2017



California King Tides Initiative

Pasture flooding near Liscom Pasture, Arcata

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Climate Change Analyst



CALIFORNIA
COASTAL
COMMISSION

BACKGROUND

CALIFORNIA COASTAL COMMISSION

Public Resources Code
Division 20
**California Coastal
Act (1976)**

Resource Protection

Safe Development



C A L I F O R N I A
C O A S T A L
C O M M I S S I O N

**COASTAL DEVELOPMENT
PERMITS &
FEDERAL CONSISTENCY**

**LOCAL COASTAL
PROGRAMS
(LCPs)**

**PARTNERSHIPS
&
WORK GROUPS**



SLR POLICY GUIDANCE



CALIFORNIA COASTAL COMMISSION SEA LEVEL RISE POLICY GUIDANCE

*Interpretive Guidelines for Addressing
Sea Level Rise in Local Coastal Programs
and Coastal Development Permits*



Sunset Beach, Photo by Mario Fernandez



Chula Vista, Photo by Lisa Cox



San Francisco, Photo by Mike Baird



Arcata, Photo by Humboldt Baykeeper

UNANIMOUSLY ADOPTED – AUGUST 12, 2015

Use science to guide decisions

Minimize coastal hazards through
planning & development standards

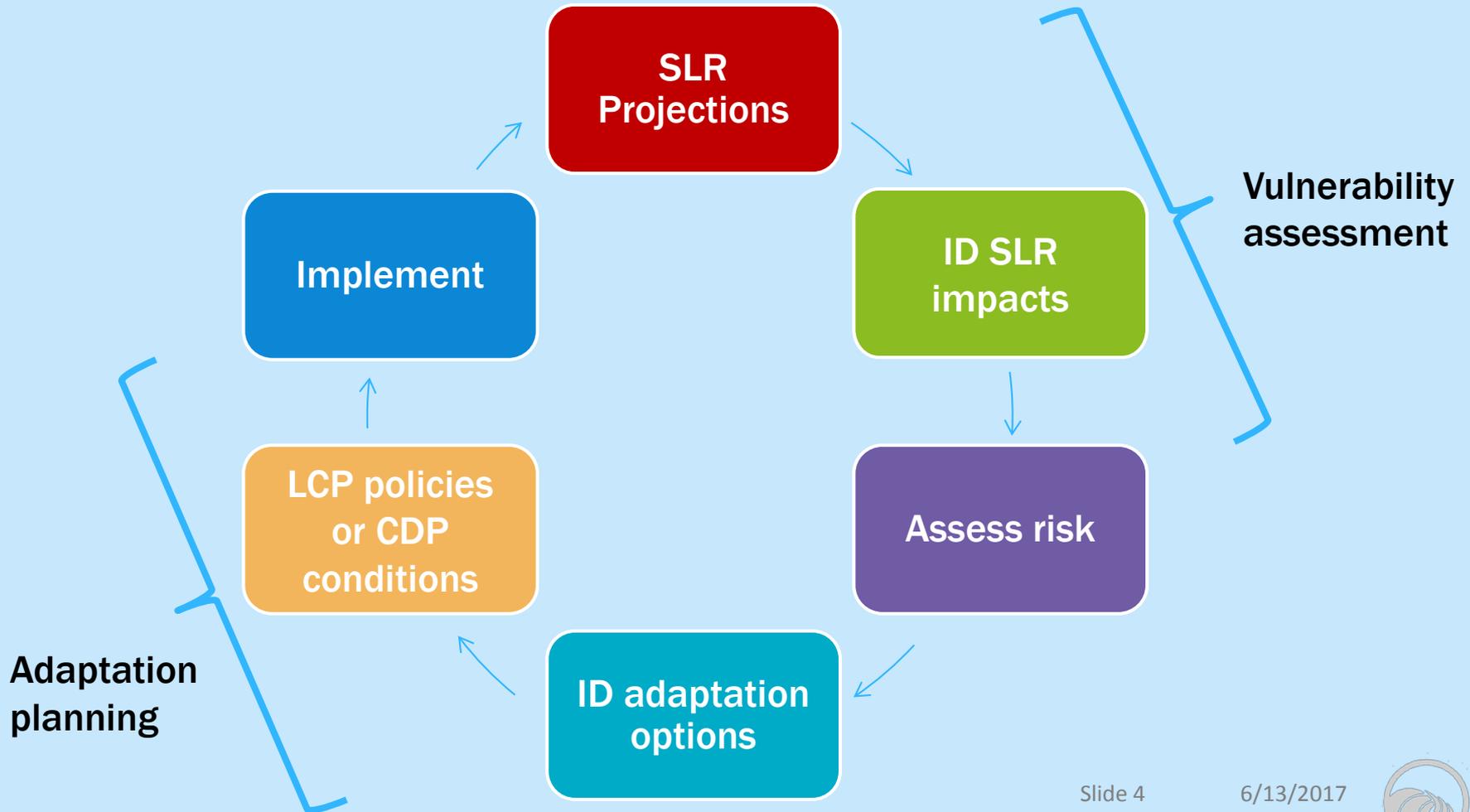
Maximize protection of public
access, recreation, & sensitive
coastal resources

Maximize agency coordination and
public participation



SLR POLICY GUIDANCE

PLANNING STEPS



SLR POLICY GUIDANCE

ASSESSING VULNERABILITY



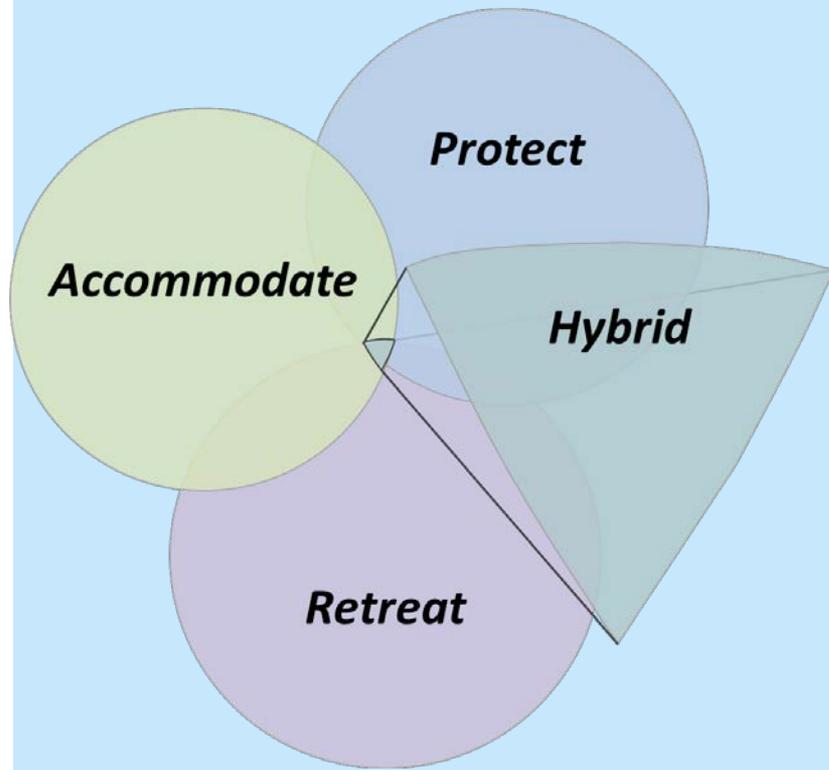
Time Period *	North of Cape Mendocino	South of Cape Mendocino
by 2030	-2 – 9 in (-4 – +23 cm)	2 – 12 in (4 – 30 cm)
by 2050	-1 – 19 in (-3 – +48 cm)	5 – 24 in (12 – 61 cm)
by 2100	4 – 56 in (10 – 143 cm)	17 – 66 in (42 – 167 cm)

* with year 2000 as a baseline

- 1. Identify SLR scenarios**
 - Multiple SLR scenarios x planning horizons
- 2. Evaluate physical impacts**
 - Storm v. non-storm
- 3. Assess impacts to coastal resources**

SLR POLICY GUIDANCE

ADAPTATION PLANNING



ADAPTATION OPTIONS PROTECTION

Diked shoreline at Humboldt Bay
National Wildlife Refuge

Humboldt Bay Sea Level Rise Adaptation Planning Project:
Phase II Report (Laird, 2015)

ADAPTATION OPTIONS PROTECTION

Humboldt Bay Shoreline Inventory, Mapping and Sea Level
Rise Vulnerability Assessment (Laird, 2013)



Fortified shoreline at Hookten Slough

ADAPTATION OPTIONS PROTECTION



Humboldt Bay Shoreline Inventory, Mapping and Sea Level
Rise Vulnerability Assessment (Laird, 2013)

Tide gate at Elk River Slough

ADAPTATION OPTIONS PROTECTION



Humboldt Bay Shoreline Inventory, Mapping and Sea Level
Rise Vulnerability Assessment (Laird, 2013)

Foredune forming on Humboldt Bay shoreline

ADAPTATION OPTIONS

PROTECTION

Southeast Aquatic Resources Partnership

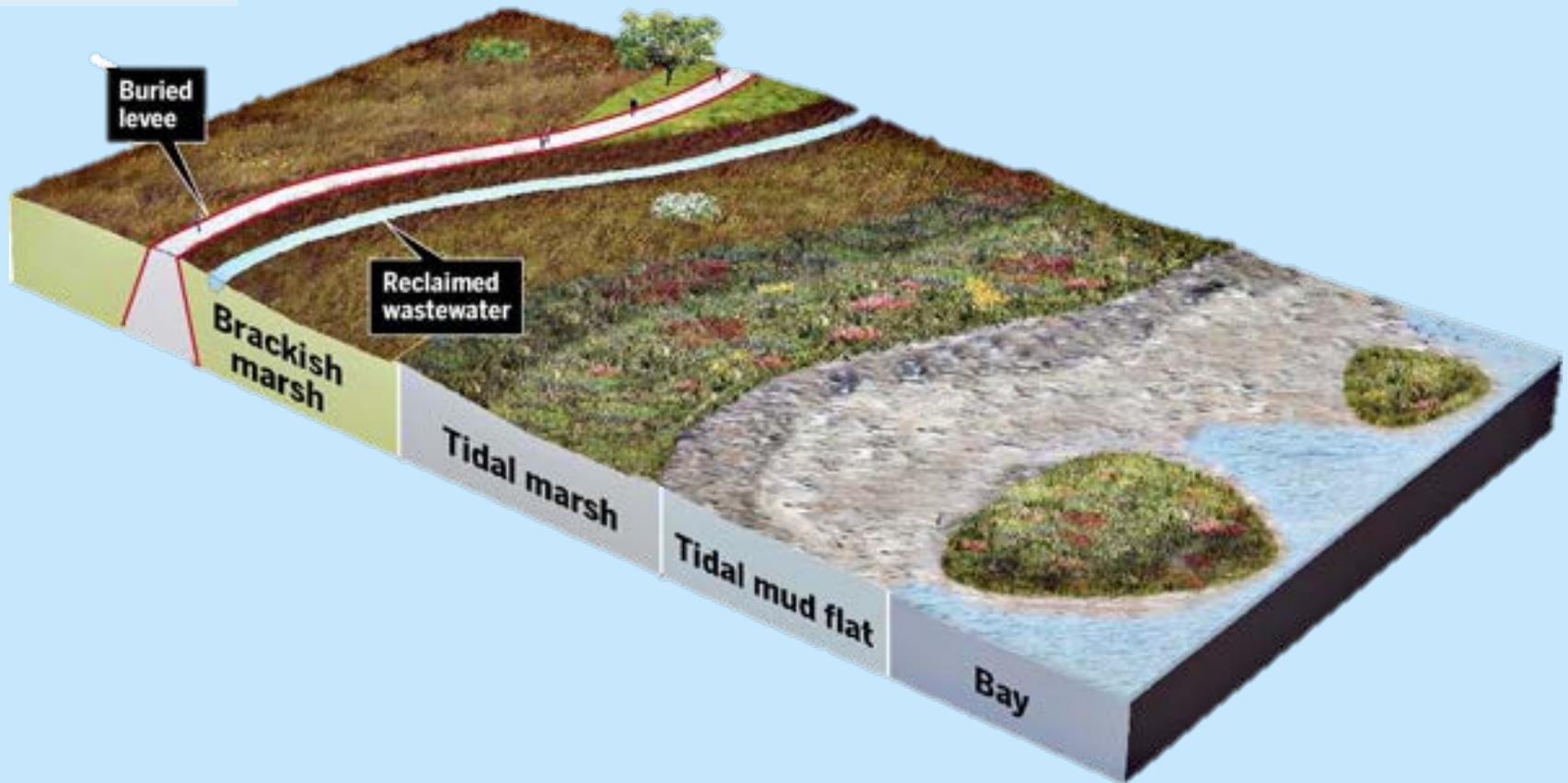


Center for Coastal Resources Management, VIMS



ADAPTATION OPTIONS PROTECTION

The Bay Institute



ADAPTATION OPTIONS

ACCOMMODATION



ADAPTATION OPTIONS

ACCOMMODATION



ADAPTATION OPTIONS

ACCOMMODATION



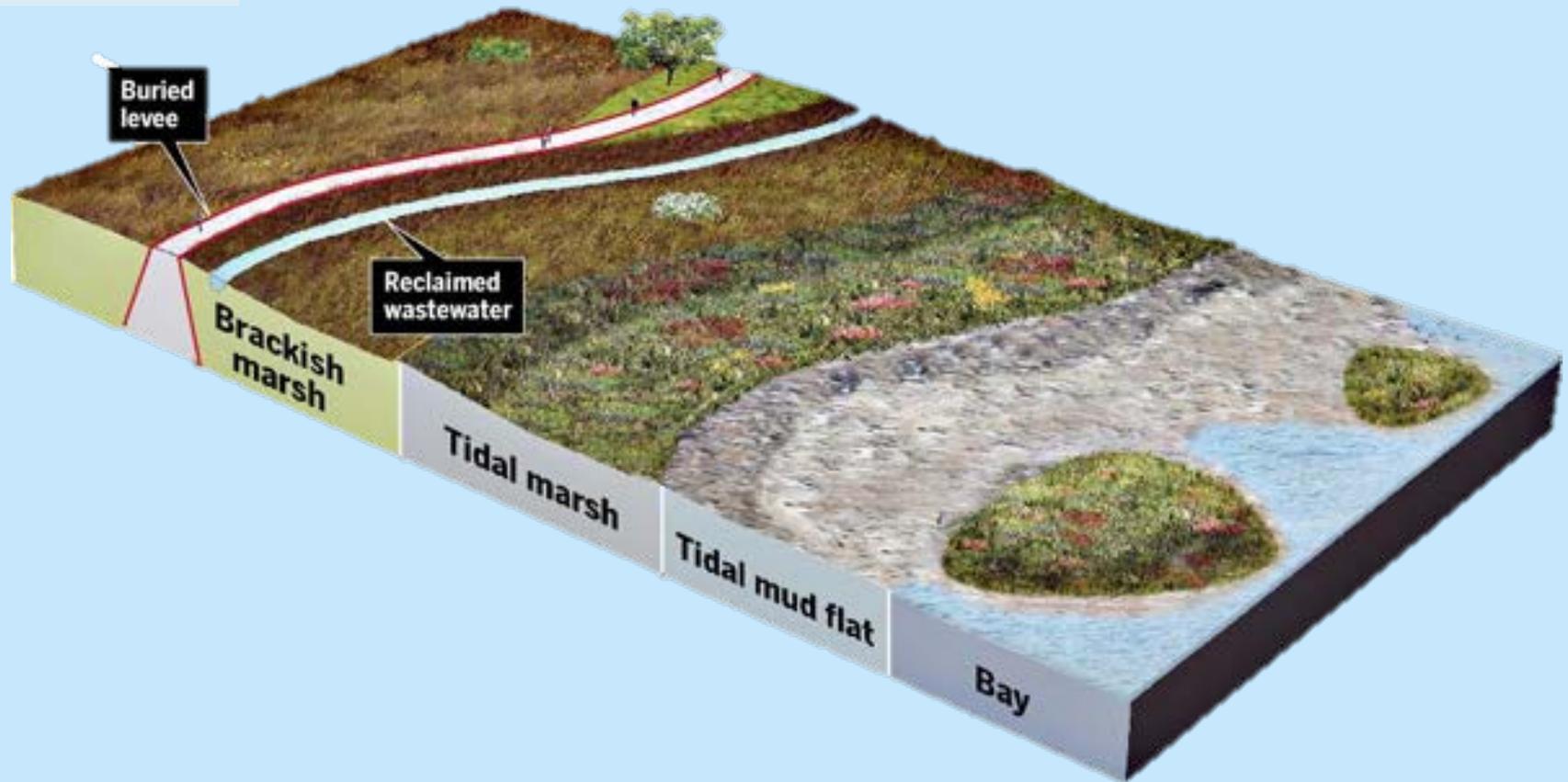
ADAPTATION OPTIONS

RETREAT

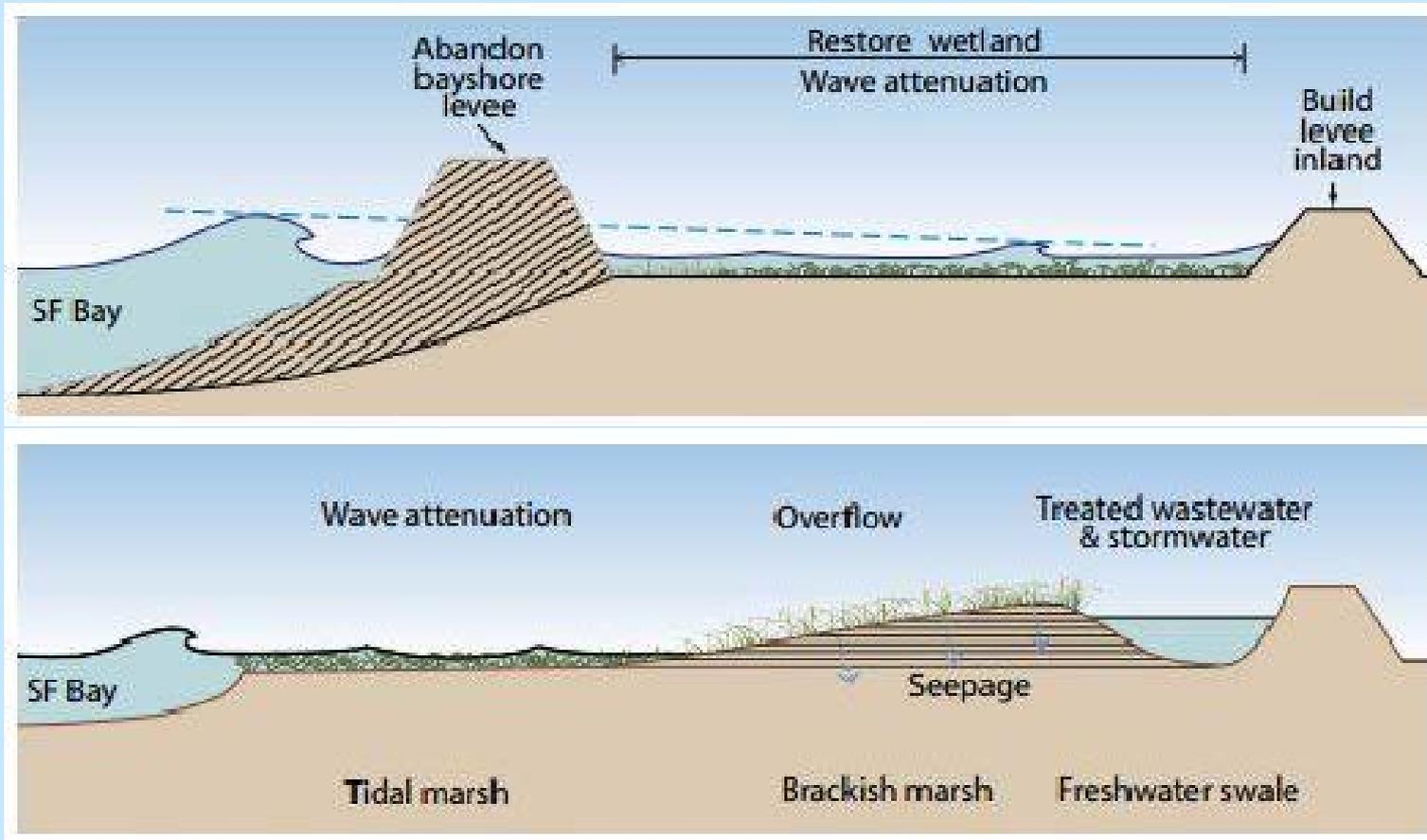


ADAPTATION OPTIONS HYBRID

The Bay Institute



ADAPTATION OPTIONS HYBRID



THANK YOU!



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