

What We Heard and Outcomes

Proposal to Update British Columbia’s Drought Levels

Overview

On March 1, 2021 the Province published a [proposal to update British Columbia’s \(B.C.\) drought level scale](#) to better align with the [North American best practices](#). B.C. uses “drought levels” to determine and communicate the severity of stream flow drought across the province. Generally, a region receives a higher drought level as river and streamflow conditions decrease compared to normal.

The Proposal

In light of feedback received over the years, the Province is proposing to update and expand the existing drought levels from a four to six-level scale. This more accurately describe stream flow drought and water scarcity conditions in B.C., allows for improved protection of water resources and local aquatic ecology, and make it easier to compare drought conditions in B.C. to other jurisdictions across the continent. The objectives of the proposed changes are to:

1. Improve clarity and focus on drought levels in B.C.
2. Better align B.C.’s drought levels with the federal and North American drought monitoring frameworks
3. More accurately describe the severity of water scarcity in an area

What We Heard and Outcomes

This document summarizes outcomes of the engagement process and comments received on the proposal. We would like to thank everyone who spent time submitting feedback and meeting with us to discuss the proposal. We are actively seeking ways to better engage with the public, industry and environmental groups, local governments, and Indigenous Nations and groups. If you wish to provide feedback please email us at livingwatersmart@gov.bc.ca.

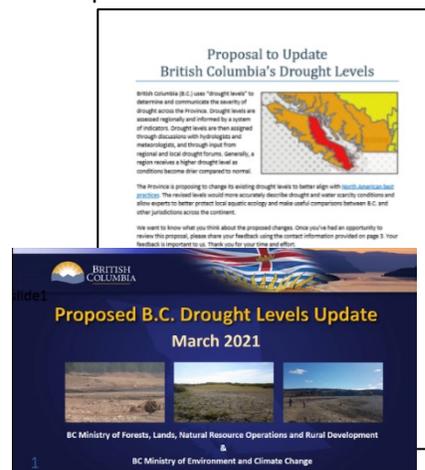
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Engagement Approach

The Province asked for feedback on this proposal from Indigenous Nations and groups, environmental groups, local government and water utilities, the public, and industry from March 1 – 31, 2021. The engagement specifically targeted potentially affected groups such as local water utilities and local governments. The engagement was limited to the proposal and did not include broader changes to B.C.'s drought response plans, policies or regulation. Multiple engagement pathways were used to increase awareness and better accommodate public engagement during the COVID-19 pandemic:

- [WSA blog post](#) with linked [PDF of proposal](#)
- Emails to environmental, NGO, Indigenous, industry, and local government groups
- YouTube video describing the proposal in greater detail
- [govTogetherBC twitter](#) (12 tweets over 5 weeks)
- Article in [The Compass](#) newsletter (published by the Union of BC Municipalities (UBCM))
- Early engagement with the First Nations Fisheries Council and their water network
- Indigenous Environmental Stewardship Initiative (ESI)/ Collaborative Stewardship Framework (CSF) webinar
- 1:1 meetings and follow-up discussions



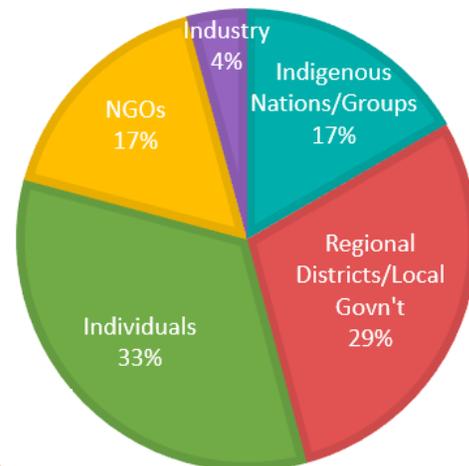
Summary of Results

In total, B.C. received 24 individual comments on the proposal: 7 (29%) from regional districts or local governments; 4 (17%) from Indigenous Nations, groups, or representatives; 4 (17%) from non-governmental organizations; 1 (4%) from industry groups, and 8 (33%) from individuals.

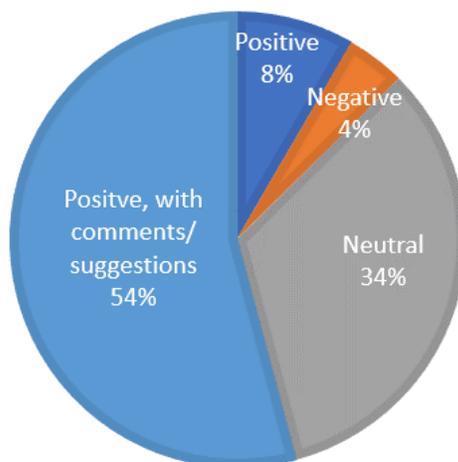
The feedback included many questions as well as supporting and opposing comments. Of the feedback received: 2 (8%) expressed clear support; 13 (54%) expressed support but shared concerns, questions, or suggestions; 1 (4%) did not support the proposal; and 8 (34%) did not clearly support or reject the proposal (i.e. provided general comments or posed questions).

Common themes included:

- drought management
- communication
- water conservation
- watershed mapping
- local government impacts
- terminology and levels
- jurisdictional alignment
- *Declaration on the Rights of Indigenous Peoples Act (DRIPA)* alignment



Type of Respondents



Type of Feedback

Support for the Proposal

Approximately 63% of the comments received were clearly supportive of the proposal to update and expand the drought levels and align them with the [North American Drought Monitor](#). Of those who indicated support for the proposal, 86% also offered suggestions or considerations for improvements, and/or voiced concerns or questions. Refer to the [Appendix](#) for further detail on feedback received.

Overall, there was support to expand B.C.'s drought levels to a six-level system to better align with the North American Drought Monitor (improving consistency across jurisdictions). There was also support for a trial of the new system over summer 2021. Several respondents expressed appreciation for the updates, and some said that this proposal is a long overdue improvement that should better guide decisions moving forwards.

"This effort to align with other drought categorizations, both with B.C. water purveyors and across the continent, is useful and appreciated. The shift to six levels will allow a more nuanced declaration of drought more appropriate to the large landscape areas covered by the provincial regions."

We heard from some respondents that the new level 0 is intuitive, that the two additional levels will result in better drought communications, and that particular terminology changes (e.g. "abnormally dry" to "dry") or retentions (e.g. maintaining the term "level") are appreciated. There was also appreciation for recognizing the role that local governments and water utilities have in determining appropriate water restrictions at the local level.

Other Feedback and Suggestions

Approximately 88% of the comments provided some suggestions, concerns, and/or questions. Of the 24 individual responses received, 1 (4%) disagreed with the proposal and expressed that the original 4-level system is preferable and easier to understand, and 8 (34%) did not clearly support or reject the proposal and instead provided general comments, suggestions or questions.

Many of the respondents provided feedback on two or more key themes. A summary of the feedback is provided below. More information and detailed comments from each respondent group is provided in the [Appendix](#).

General Drought Management and Response

We heard from multiple respondents that it was not clear what type of drought or water scarcity (such as meteorological, agricultural, hydrological, ecological, or a weighted combination thereof) is being analyzed. We also heard that the proposal scope is too narrow. Multiple respondents expressed that a systematic review of B.C.'s drought response and management is needed towards forming a more comprehensive approach to drought response that aligns with up-to-date science and best practices while addressing challenges faced by local governments and water utilities.

"This change and other amendments to the BC Drought Response Plan since 2008 have been fairly narrow and do not reflect the necessary reforms or leading practices for effective drought management and response."

Local Water Utilities

We heard that decisions made by local water utilities towards implementing bylaw water restrictions may not neatly match provincial drought levels. Some indicated a perception that water management responsibilities are being downloaded onto local governments, which can be costly and resource-intensive for these jurisdictions. In contrast, others expressed a strong preference for local autonomy in determining the most appropriate action for their local environmental and socioeconomic context, which can depend on reservoir storage levels, system capacities, local downstream environmental flow needs, and community economic and social issues. We also heard requests for guidance and communication strategies on how to implement and communicate the new drought levels to the public and communities.

“It is easy for the Province to declare the levels, but the local governments are the ones that are challenged to deal with the communication and management piece. Recognising that there can be a disparity between local conditions and provincial levels must be addressed by the Province.”

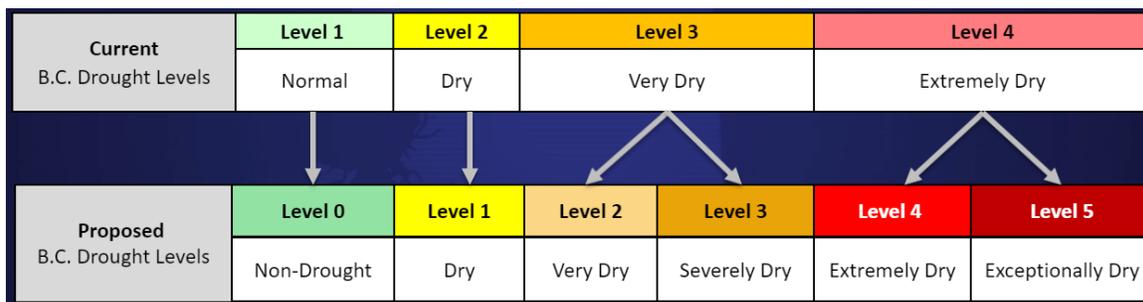
Communications

We heard from several respondents that having differing and inconsistent communications from local and provincial governments causes confusion and presents challenges for enforcement and water conservation. There were many requests to increase education, awareness, and visibility of drought and water scarcity communications, as well as requests for targeted approaches for specific groups including the agricultural community, well owners, and tourists.

“The challenge still exists when what the public is seeing regionally (weather and water supply levels in reservoirs) not matching the drought levels seen provincially or within the municipality.”

Levels and Terminology

We received many comments on the proposed terminology for the updated and new drought levels. In general, we heard that several of the proposed level titles (as seen in the figure below) were subjective and not intuitive, in that the higher-level titles did not have an obvious order to them (i.e. “Severely dry, Extremely Dry, Exceptionally Dry”). Of all the feedback received only 1 respondent (4%) preferred the original four-level system as it was viewed as simpler and easier to understand.



We heard requests for more information on the drought levels and suggestions for adding additional detail including:

- indicators and thresholds/triggers for drought (e.g. % of stream level, snow level, precipitation, higher temperatures compared to normal, etc.)
- their relative likelihood and possible timing
- recommended water use reduction (%)

Feedback was also provided on the proposed general response measures, and there were requests for more information on the stepwise progression, indicators, and links to regulatory tools (e.g. Temporary Protection Orders).

Watershed Mapping and Scale of Analysis

Several respondents shared feedback that the provincial watershed mapping areas are too broad, that they grouped too many areas together, and may not be representative of actual water conditions at smaller watershed scales. We heard that current watershed boundaries should be refined using regional information and collaboration with local governments to achieve better drought response and communication.

“If regions were divided into smaller boundaries ... and regional information and local community information (e.g., reservoir levels) were both used/available, a drought level may be more informed and may align with the local situation.”

Alignment with DRIPA and UNDRIP

Multiple respondents commented on the need to describe how B.C.'s drought response aligns with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the B.C. *Declaration on the Rights of Indigenous Peoples Act* (DRIPA). We heard that Indigenous Nations “are rights holders and not stakeholders” and that there is a need for shared decision-making when managing drought in B.C.

Other

Some feedback went beyond the scope for the proposal to update B.C.'s drought levels. We heard concerns from some respondents on how water allocation decisions are being made in B.C. (e.g. related to accountability, monitoring, enforcement, and shared decision-making), and we heard requests for additional climate adaptation projects, water storage infrastructure, and water security for specific groups of water users.

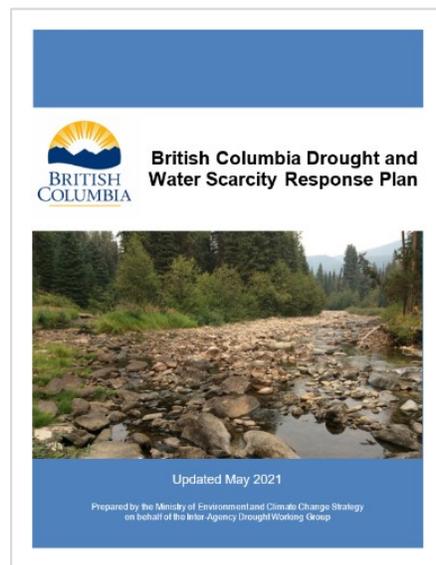
Outcomes

The proposal was revised following a thorough review and consideration of all the feedback received. As a result, the proposed drought levels were updated, and the Drought Response Plan was revised to reflect the proposal. A province-wide trial of the proposed levels will occur this spring or summer.

Updates to the Drought Levels and Drought Response Plan

In light of feedback received, the proposed drought levels were revised to make them clearer and easier to understand. The Drought Response Plan was also updated to reflect the revised proposal, including:

- updated drought levels (see table below)
- clarified that provincial drought monitoring focuses on hydrological drought
- improved definitions (e.g. “drought”)
- added supplemental drought indicators meant to augment drought conditions set out by core indicators (e.g. stream water temperature, percent mean annual discharge)
- improved messaging on provincial and local government roles
- improved messaging on drought level expectations and actions
- updated colours to improve accessibility
- housekeeping updates and improved readability



Level	Impacts	General Response Measures
0	There is sufficient water to meet socio-economic and ecosystem needs	Preparedness
1	Adverse impacts to socio-economic or ecosystem values are rare	Conservation
2	Adverse impacts to socio-economic or ecosystem values are unlikely	Conservation Local water restrictions where appropriate
3	Adverse impacts to socio-economic or ecosystem values are possible	Conservation Local water restrictions likely
4	Adverse impacts to socio-economic or ecosystem values are likely	Conservation and local water restrictions Regulatory action possible
5	Adverse impacts to socio-economic or ecosystem values are almost certain	Conservation and local water restrictions Regulatory action likely Possible emergency response

Spring-Summer 2021 Trial

Government is now running a province-wide operational trial of the proposed drought levels during the spring and summer (and into and early fall if conditions necessitate). The trial will be evaluated at the end of this period to determine its effectiveness. If found beneficial, then the proposed levels will likely become permanent.

Appendix: Feedback Received

Indigenous Nations and Groups

“Drought, its intensity, or how the extent of the drought and response measures are of considerable concern to [Nation] as the [redacted] watershed suffers from drought.”

Category	Feedback
Support for the Proposal	
Regional Approach	<ul style="list-style-type: none"> Support the approach for regions/districts in obtaining local input during times of drought or seasonal scarcity
Negative	
Communication	<ul style="list-style-type: none"> WSA Blog post is not an effective engagement method and consultation is still required
General Suggestions and Observations	
UNDRIP and DRIPA	<ul style="list-style-type: none"> WSA amendments to align legislation with DRIPA should be the priority Drought response needs to be aligned with UNDRIP and DRIPA More information needed on how the proposal impacts DRIPA Policy and action plan are needed to help incorporate DRIPA
Shared decision-making	<ul style="list-style-type: none"> First Nations are rights holders, not stakeholders Need for shared decision-making drought response structures and processes with Indigenous Nations that reflect UNDRIP and DRIPA commitments and government-to-government relationships
Drought Management	<ul style="list-style-type: none"> Drought indicators need to be updated (e.g. include temperature) Need for more information on the rationale behind the proposed changes
Other	<ul style="list-style-type: none"> Water in Coldwater Valley is used for ceremonies and use is often restricted due to drought and wildfire Feedback on water allocation decisions: <ul style="list-style-type: none"> blanket permits on multiple licences is inappropriate government needs to be accountable for water bottling there is a complete lack of monitoring and enforcement there is a mismanagement of fish and water, and this impacts plants, food, medicine TMX pipeline expansion is very concerning, and it is an example of how the senior governments have failed to fully consider and apply shared decision making

Local Governments

Includes regional districts, municipalities, and local water utilities.

“The province is expecting that the municipal plans and bylaws will be updated to reflect the new provincial levels. This downloading of responsibilities puts undo [sic] financial and resource burden on the [the city] to change their [drought management plan] and bylaws and modify data collection to match the expectations of the new levels.”

“It is easy for the Province to declare the levels, but the local governments are the ones that are challenged to deal with the communication and management piece. Recognising that there can be a disparity between local conditions and provincial levels must be addressed by the Province.”

“This effort to align with other drought categorizations, both with B.C. water purveyors and across the continent, is useful and appreciated. The shift to six levels will allow a more nuanced declaration of drought more appropriate to the large landscape areas covered by the provincial regions.”

Category	Feedback
Support for the Proposal	
General	<ul style="list-style-type: none"> • Proposal will better guide decisions in light of climate change • Appreciate communication efforts (video)
Terminology/ Levels	<ul style="list-style-type: none"> • Support finer-grain distinction between levels • Appreciate continued use of “level” terminology (differs from local terms and plans) • New levels read better (“abnormally dry” changed to “dry” • Appreciate continued approach of local water purveyors determining restriction responses
Alignment	<ul style="list-style-type: none"> • Support approach to align with the North American Drought Monitor • Proposal creates a standard for all jurisdictions to follow
Negative	
General	<ul style="list-style-type: none"> • Avoid the term “skin colour” (used in the video) to describe the colour “peach” • Proposal does not address most challenges faced by local water purveyors • Proposal places undo financial and resource burden on local governments to change their drought management plans, bylaws, and data collection methods • Differing communications (locally, provincially) is confusing and makes bylaw enforcement and behavioural change less effective • Little information on what the trial will consist of (where, when, what)
Terminology/ Levels	<ul style="list-style-type: none"> • Proposal doesn’t list local water restrictions until level 2 (not realistic in some cases)
General Suggestions and Observations	
Terminology/ Levels	<ul style="list-style-type: none"> • “Normal” definition is an average statement. Some smaller systems within the large mapped area may be experiencing dry and very dry. Consider including a “general” statement to allow for specific site-specific regulations when required. • Add percentages of water conservation or water usage reduction (e.g. reduce water use by 10%)

	<ul style="list-style-type: none"> • Add trigger points for the different levels, e.g.: snow level, % of MAD, precipitation % from normal, temperature from normal, % water level, etc. • Include a timeline when these “general response measures” are most relevant too (e.g. early summer, late summer)
Gaps	<ul style="list-style-type: none"> • How does this impact groundwater (deep vs shallow)? • How do well users know if they are impacted by drought?
Scope	<ul style="list-style-type: none"> • Watershed boundaries should be refined - this would require local engagement (e.g. split areas based on hydrology and geography, like Koksilah from East Vancouver Island) • Include reservoir levels (they impact drought levels)
Communication	<ul style="list-style-type: none"> • Local governments need communication strategies and guidance on drought stages and levels • Communities should have water conservation plans that include residential water meters – have provincial discussions with local government councils on the benefits of water meters

Industry Groups

“[The group] supports the move to harmonize British Columbia’s drought levels with those of other jurisdictions in North America.”

Category	Feedback
Support for the Proposal	
General	<ul style="list-style-type: none"> • Change to a six-category classification system seem reasonable • Supports alignment with North American Drought Monitor
Negative	
General	<ul style="list-style-type: none"> • Unclear whether this will change drought planning or response • Concerned about water shortages and dwindling available water on the land base
Terminology/ Levels	<ul style="list-style-type: none"> • Strongly oppose the change from “voluntary reduction” language for water licence holders
General Suggestions and Observations	
Communication	<ul style="list-style-type: none"> • Need for drought planning and response awareness/education among the agricultural community
Drought Management	<ul style="list-style-type: none"> • Water conservation and demand management plans and supply availability assessments should be a requirement prior to subdivision or community planning development approvals in chronically drought impacted areas
Water Management	<ul style="list-style-type: none"> • Need to protect water for livestock during times of scarcity and ensure herds have access to drinking water sources during times of scarcity • Strong need for the province to invest in climate adaptation projects that will increase water storage capacity, including • Investing in water storage would have a far greater impact on how British Columbians manage drought than changing the drought level classifications (infrastructure -- such as dams, dugouts, reservoirs -- help capture available water during freshet and store it for use throughout high demand seasons. Dams and water reservoirs can also be an effective tool for flood mitigation)

Individuals

"I'm not sure how adding an extra level enhances the public's understanding of what each level represents."

"I find the change to be an improvement, thank you."

"I am very happy to see this direction!"

Category	Feedback
Support for the Proposal	
General	<ul style="list-style-type: none"> The proposed change is a welcome improvement
Negative	
General	<ul style="list-style-type: none"> "skin colour" is used in the video to describe the colour "peach" – this was described as "unintentionally racist" Unclear what type of drought this is: meteorological, hydrological, agricultural, or economical (supply-demand)
Terminology/ Levels	<ul style="list-style-type: none"> The existing four level scale is simpler and more easily understood by the public Adding an extra level does not enhance the public's understanding of what each level represents 'Very Dry, Severely Dry, Extremely Dry, and Exceptionally Dry' are confusing terms as they are subjective, and all appear to mean the same thing
General Suggestions and Observations	
Terminology/ Levels	<ul style="list-style-type: none"> Include a line that says, "check your water system supplier's website for the most up-to-date restrictions in your area" or something like that. Include 'rare', 'unlikely' 'possible' 'likely' and 'almost certain' to illustrate examples that the public can relate to, e.g.: <ul style="list-style-type: none"> creeks are running low and water is too hot to support fish farmers may not have enough water for crops or animals the forest is drying to dangerous fire levels evaporation rates are high
Communication	<ul style="list-style-type: none"> need for better communication to spread awareness/education on drought and water conservation targeted towards tourists and farmers, including "so what" messaging need to address well owners separately <ul style="list-style-type: none"> targeted communication needed for well owners there is no joint effort in groundwater conservation (some neighbours do, some don't, all may be impacted) enforcement needed to support well owner water conservation challenge the mentality that "I paid for my well therefore it is my water" impression that well owners feel government is overstepping with well registration and groundwater licensing

Non-Governmental Organizations

"We are supportive of the alignment of BC's Drought Levels with the North American Drought Monitor and agree these changes provide better detail and the possibility for a more sophisticated approach to drought preparation and response."

"The six level drought information [is] accessible to the public... very useful, well presented, and is worth expanding upon now that drought situations may become more frequent."

Category	Feedback
Support for the Proposal	
General	<ul style="list-style-type: none"> • Commend government's progress to-date on drought management improvements • Supportive of the alignment with the North American Drought Monitor and consistent with other jurisdictions • Proposal is a useful first step (if paired with more explicit indicators and triggers for progression through the levels) • The drought map and severity warnings are great
Terminology/ Levels	<ul style="list-style-type: none"> • Supports the inclusion of 6 levels • It is intuitive to have an explicit 0 level for a situation where no drought exists • Proposal provides better detail and the possibility for a more sophisticated approach to drought preparation and response
Negative	
General	<ul style="list-style-type: none"> • The proposed change is too narrow and does not reflect the necessary reforms or leading practices for effective drought management and response • Need a more comprehensive review and update of BC's Drought Response Plan • Two different drought messages (local and provincial) is very confusing - the public does not understand the difference • Unclear whether this drought index pertains to meteorological, agricultural, or hydrological drought, or some weighted combination
Terminology/ Levels	<ul style="list-style-type: none"> • "severe, extreme, exceptional" is subjective and does not have an obvious ordering
General Suggestions and Observations	
Terminology/ Levels	<ul style="list-style-type: none"> • Recommend always using the numbers as well as the titles, and include that the numbers are on a scale from 0 to 5 • Emphasize the importance of clarifying the indicators and triggers for stepwise progression
Communication	<ul style="list-style-type: none"> • Communication guidance or resources are needed for tourist season (groundwater scarcity, drought)
UNDRIP and DRIPA	<ul style="list-style-type: none"> • Align drought response with UNDRIP and DRIPA: <ul style="list-style-type: none"> ○ may involve evolving existing regional drought management structures or creating new collaborative approaches under G2G agreements. ○ may involve further inclusion of Indigenous perspectives throughout the Drought Plan and in identifying indicators and thresholds to trigger different Drought Levels and response



Drought Management	<ul style="list-style-type: none">• Shifting from costly crisis response to proactive prevention and forward-looking adaptation is essential to reduce the severity of social, economic, cultural, and ecological damages from drought and help communities prepare and adapt• Need to develop clear watershed-specific triggers and indicators• Need to work with communities and local Indigenous Nations on watershed basis to define local indicators that effectively trigger a timely progression between Drought Levels to engage formal restrictions, regulatory actions, and emergency responses.• Need to link drought levels and responses with deployment of WSA regulatory tools and Temporary Protection Orders, paired with further specific tools such as Water Sustainability Plans, Water Objectives, and local plans led by co-governed regional drought teams to create longer-term solutions and responses
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