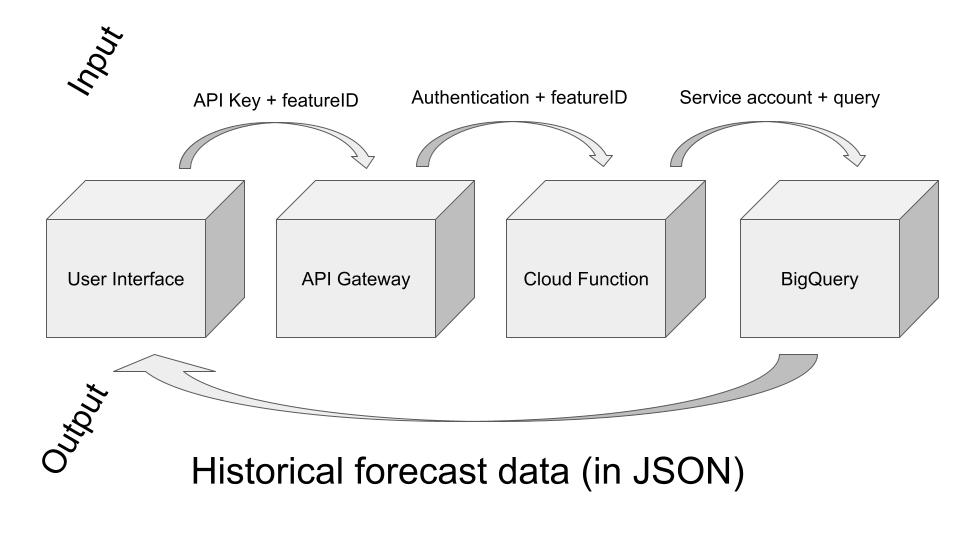
Forecast API - Architecture Diagram



* Service account information:

[function-to-bigquery@nwm-ciroh.iam.gserviceaccount.com](mailto:function-to-bigquery@nwm-ciroh.iam.gserviceaccount.com) is set up to access both Cloud Function from API Gateway and BigQuery from Cloud Function. Permissions: BigQuery Job User & Cloud Run Invoker

* Information on the Get Calls:

At this time we focused on developing a structure that could be later adjusted and expanded as needed. Authentication has been set up, and the functions just take one variable (featureID) for now.

*forecastrecords* contains the query:

"SELECT feature\_id, reference\_time, time, streamflow

FROM

`ciroh-water-demo.national\_water\_model\_demo.channel\_rt\_analysis\_assim`

WHERE

feature\_id = {feature\_id}

AND forecast\_offset = 1

AND time > '2023-03-03'

AND time < '2023-04-02'

ORDER BY

time"

nd *dailyaverages* contains the query:

"SELECT feature\_id, reference\_time, time, streamflow, velocity

FROM

`ciroh-water-demo.national\_water\_model\_demo.channel\_rt\_long\_range`

WHERE

feature\_id = {feature\_id}

AND ensemble = 0

AND forecast\_offset = 10

AND time > '2023-03-03'

AND time < '2023-04-02'

ORDER BY

time"

* API calls in Cloud Shell:

1- Interacting with Cloud Function directly

*curl -m 70 -X GET https://us-central1-nwm-ciroh.cloudfunctions.net/forecastrecords\_1?featureID=12068774 \*

*-H "Authorization: bearer $(gcloud auth print-identity-token)" \*

2- Going through API Gateway:

*curl -X GET "https://api-gateway-get2-9f6idmxh.uc.gateway.dev/forecastrecords?featureID=12068774" -H "x-api-key: [\*\*Insert API Key\*\*]"*

*curl -X GET "https://api-gateway-get2-9f6idmxh.uc.gateway.dev/dailyaverages?featureID=12068774" -H "x-api-key: [\*\*Insert API Key\*\*]"*