



Bear Valley
Electric Service, Inc.
A Subsidiary of American States Water Company

BVES Joint IOUs' 2022 PSPS Post Season Workshop

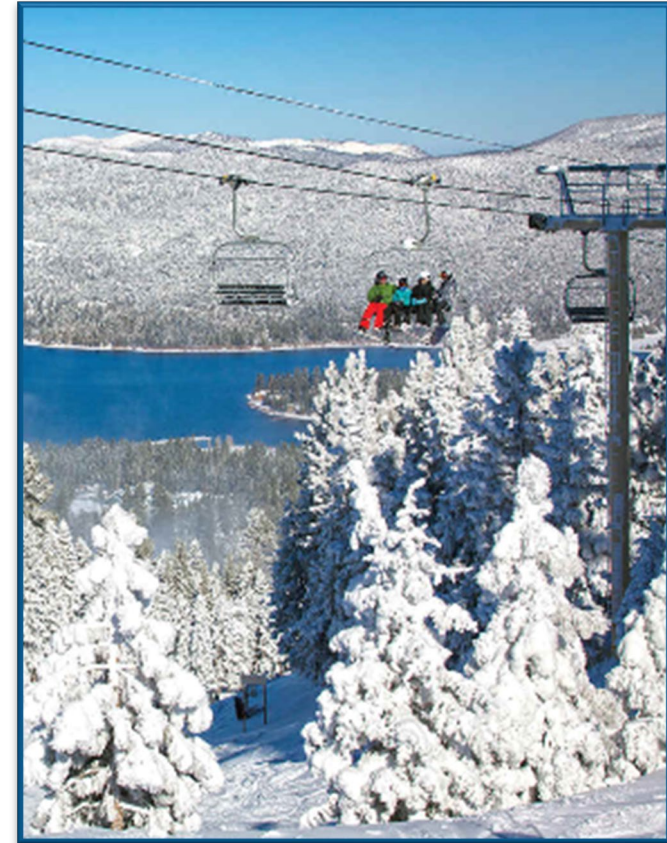
April 18, 2023

Paul Marconi – President, Treasurer & Secretary

Performance and Execution of PSPS in 2022

Comparison of performance and execution from 2021 to 2022.

- BVES did not experience any PSPS events in 2021 or 2022.
- In 2021, BVES conducted 2 table top exercises.
- In 2022, BVES conducted 1 table top exercise and one semi-functional exercise.



Performance and Execution of PSPS in 2022

Wildfire risk conditions between 2021 and 2022. compares to prior year to year wildfire risk conditions.

- 2021 Days for “Very Dry” and “Dry” conditions were 287
 - 2022 Days for “Very Dry” and “Dry” conditions were 237
 - 2021 Quarterly Average of high wind speed was 30.5 mph
 - 2022 Quarterly Average of high wind speed was 31.0 mph
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- 2020 Days for “Very Dry” and “Dry” conditions were 256
 - 2020 Quarterly Average of high wind speed was 24.8 mph
 - Minimal changes in wildfire risk conditions between these years.

Highest Daily Sustained Wind on High Risk Days								
Wind Gusts	2015	2016	2017	2018	2019	2020	2021	2022
>55	0	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	0	0	0
40 to 49	0	0	0	0	0	0	0	0
30 to 39	0	0	0	0	0	0	1	0
20 to 29	7	2	6	5	3	7	4	2
<20	100	149	112	124	84	154	83	80

Highest Daily Wind Gust on High Risk Days								
Wind Gusts	2015	2016	2017	2018	2019	2020	2021	2022
>55	0	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	0	0	0
40 to 49	1	0	0	0	1	1	2	0
30 to 39	7	7	5	6	1	5	5	1
20 to 29	43	78	39	64	27	65	51	40
<20	56	66	74	59	58	90	27	23

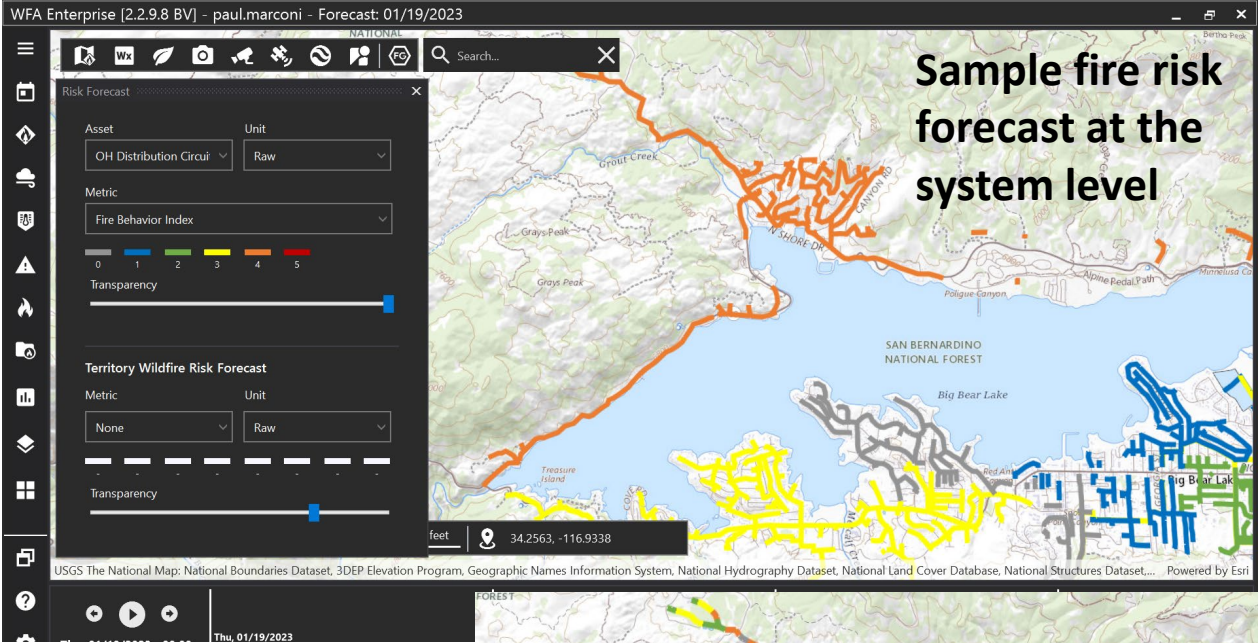
Forecasting

- Accuracy of the IOU's meteorology and fire science predictive models over time
 - BVES utilizes Technosylva's Wildfire Analyst Enterprise (WFA-E) application. The fire model itself in Technosylva's analysis and in the general literature is expected to reach a confidence level of 60%. The uncertainty in measurements used in model validation are known and documented by Technosylva. Validation is usually done using satellite products and/or known fire perimeters where the uncertainty is known to be within a range. The uncertainty from these measurements is usually much lower than the uncertainty in predictions and does not have a relevant impact on the validation process itself.
- Methodology for validating the improvements to predictive models
 - BVES utilizes Technosylva's Wildfire Analyst Enterprise (WFA-E) application. The model is validated by comparing past events. All code or scenario changes go through a Quality Assurance stage which includes several statistical analyses to the data (confirming risk metrics follow a given probability distribution, comparing results with previous versions, etc.), and a manual revision done by qualified fire protection specialists.
- An update on the status of PSPS modeling
 - BVES began utilizing WFA-E application in 2022 greatly enhancing BVES's near real time forecasting and modeling capabilities with respect to wildfire threat. With the model, real time weather and wildfire risk data is processed to provide a risk forecast. Additionally, BVES staff can now perform fire spread predictions based on the fire risk forecast.
- Discuss operational models used for determining whether/how to implement a PSPS event
 - BVES utilizes fire risk generated in the Technosylva WFA-E application and it also utilizes NFDRS fire risk categories (Brown, Orange or Red) and wind speed (sustained wind or 3-second wind gusts exceeding 55 mph) to make a determination on whether or not to invoke a PSPS event.
 - BVES is working with Technosylva to develop a BVES specific Fire Potential Index (FPI), which will eliminate the NFDRS process.

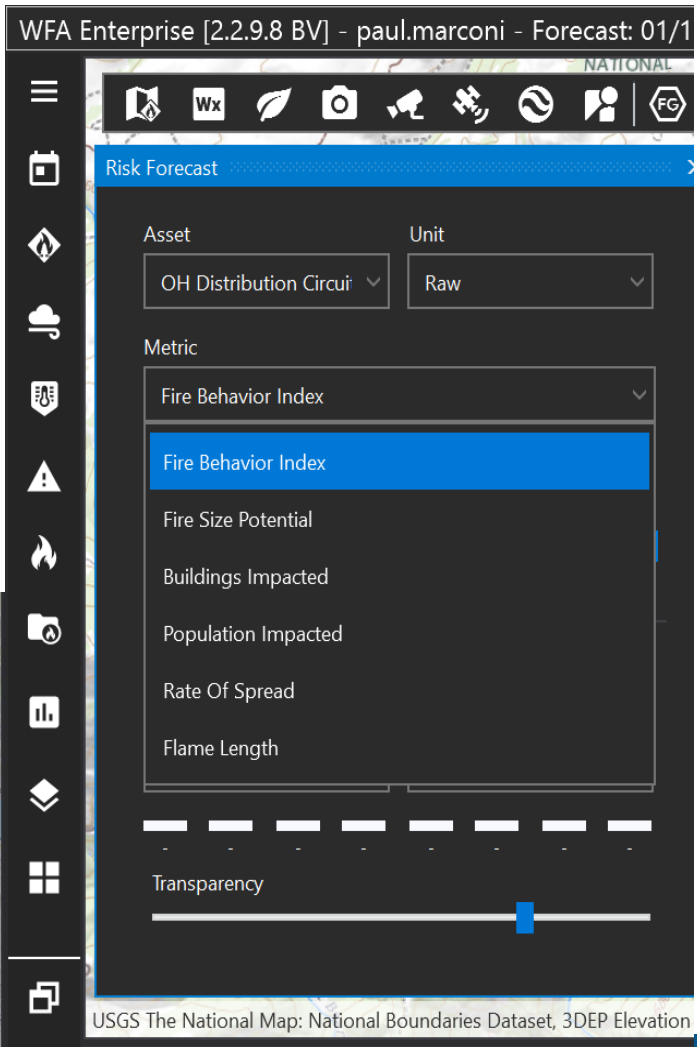
Forecasting (continued)

- Provide an update on the consequence modeling used for mitigation prioritization
 - BVES currently utilizes the BVES Risk Register Model (SMJU Risk Based Decision Making) and the BVES Fire Safety Circuit Matrix to prioritize mitigation initiatives.
 - BVES is transitioning to utilizing the Technosylva's Wildfire Risk Reduction Model (WRRM) and expects to fully implement it in developing its 2024 WMP Update.
- Provide an update on how the utilities will integrate previous PSPS damage events within the ignition likelihood of their risk model
 - BVES does not have any previous PSPS damage events to model.
- The inaccuracy of the previous weather forecast has a ripple effect on the timeliness of PSPS notifications
 - BVES has not had the need to invoke a PSPS or even make a PSPS notification to customers. Therefore, BVES does not have data on this specific issue.
 - However, since implementing the Technosylva WFA-E model, BVES has significantly reduced the area size of potential risk. In fact, the model pin points high risk segments such that BVES can send field personnel to evaluate the actual field conditions. Furthermore, with the fire spread simulation, BVES is able to evaluate not only the impact on its service area but also the impact outside of its service area.
- Please discuss in detail the weather forecast modeling improvement efforts in 2022 and planned enhancements in 2023.
 - BVES completed the installation of 20 weather stations as of 2021. The weather station data feeds directly into the WFA-E model.
 - At present, the 20 weather stations in BVES's 32 square mile service area (less if you subtract out the lakes) are evaluated as more than sufficient to provide coverage with excellent overlap between weather stations so that if a weather station goes down, there is still more than adequate weather station coverage in the service area.
 - Enhancements for 2023 include improved staff training utilizing the weather station data and the WFA-E model and sharing weather station data with NOAA.

Forecasting (continued)



Fire risk metric selection



Notification/Communications

- BVES has ample participation in both its table-top and functional exercises. Communication efforts to solicit participation includes advertising through our social media outlets, radio station, website, and email campaigns. Below is a table of our 2022 PSPS meetings.

PSPS Meeting Date	Meeting	Number Invited	Number Attended
April 14, 2022	BVES 2022 Annual PSPS Exercise	56	58
June 20, 2022	BVES Internal PSPS Functional Exercise - prep for June 21, 2022	9	9
June 21, 2022	BVES Annual PSPS Functional Exercise	142	42
June 30, 2022	BVES Annual WMP and PSPS Community Outreach	All BVES Customers	8
August 18, 2022	PSPS Advisory Meetings and Planning	76	20

Notification/Communications

Public education and outreach improvements

- BVES works closely with communications providers and other state agencies to ensure they have the most up to date information as early as possible to allow them to take applicable appropriate action.
 - Communication channels we use to communicate: Phone, email, emergency text, and IRestore First Responder.
 - BVES tests the contact information for our state agencies and critical facilities throughout the year.



CRC

- BVES Community Resource Center:
 - Located at BVES's main office at: 42020 Garstin Dr., Big Bear Lake, Ca 92315
 - It would take all our customers approximately 20 minutes to reach, regardless of their physical location. Alternate location identified and coordinated.
 - BVES has never had to execute our CRC due to never implementing a PSPS event. The CRC has been set up during training of staff.

Community Resource Centers offers:

• Water • Wi-Fi/Internet • First Aid • Snacks • Phone Charging • Ice • Restrooms • Chairs • Transportation to and from the CRC (if available) •	• Up-to-date information on outages • Blankets • Flashlights • Batteries/charging for medical devices • Access to cellular network service • PSPS Representatives
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Medical Baseline/AFN

- BVES has the ability contact our Medical Baseline and AFN Customers. customers by IVR (interactive Voice Response) call, Text messages, Door hangers, website updates, and Facebook updates.
- Added a Medical Baseline application to our website which allows physician assistants, nurses, and doctors to e-sign the medical baseline form.
- Local government agencies have list of current medical baseline/AFN customers in case of an emergency or if we were to ever invoke a PSPS event.
- Currently, BVES has identified 589 AFN customers.

Battery Backup



- BVES offers a small scale back up battery assistance program and will distribute them on an as needed/requested basis.
- If a PSPS is being considered, the AFN list for the affected area is generated and they are contacted to determine specific needs.
- Batteries are distributed in a manner to maximize benefit.
- BVES works with City of Big Bear Lake, San Bernardino County, Big Bear Fire Department, and Sheriff's Department to coordinate AFN assistance.

2022 PSPS Survey Results

Key Findings

- **46% are aware of wildfire safety communications**, in line with June 2022 results.
- **BVES** remains the primary source for wildfire preparedness information, and **vegetation management, personal preparedness, and the BVES Wildfire Mitigation Plan** are the most common messages recalled.
- **Direct Mail** is the most cited channel for wildfire preparedness communication, followed closely by email, the BVES Website, and bill inserts.
- **41%** recall seeing, hearing or reading the phrase “**Public Safety Power Shutoff or PSPS,**” similar to the last wave. **TV News (35%)** remains the most common source of PSPS communication, followed by **radio**, which **increased significantly** since June 2022 (26% vs 15%).
- **PSPS recall is significantly higher among recallers** (54% vs 30%).
- **41%** say they would first turn to the **BVES website** for information about a PSPS event. And **70%** understand the following statement about PSPS: “**for areas at a higher risk of fast-spreading catastrophic wildfires, the utility will proactively shut off power during extreme and dangerous weather.**”
- **Notifications via text and email are considered most effective** forms of communication from BVES. Larger font is the most helpful element of communications that could be incorporated.
- **Four in five respondents (81%) have taken actions to prevent or prepare their home or business in the event of a wildfire**, consistent with previous results (79% in June 2022).
- **Trimming vegetation remains the most common action taken**, mentioned by 83% of respondents who have taken action; mentions of preparing an emergency readiness plan and contact information decreased significantly from June 2022.
- Consistent with previous results, half are aware of BVES pruning vegetation around power lines in higher-risk areas (48%).

2022 PSPS Survey Results

Key Findings - continued

- Since June, **awareness has increased significantly for investing in covered conductors, wood pole alternatives, and additional control devices** (17% vs 12%).
- Recallers are significantly more likely than Non-Recallers to be aware of all of BVES' efforts.
- **Two in five (41%)** say they recall seeing, hearing or reading the phrase "Public Safety Power Shutoff or PSPS".
- Recallers are significantly more likely to recall PSPS than Non-Recallers customers (54% vs. 30%).
- **TV News (35%) remains the most common source of PSPS communication** followed by radio (26%); the percentage mentioning radio increased significantly since June 2022 (26% vs 15%).
- As seen in prior waves, the **BVES website remains the most mentioned source for information about PSPS**.
- **Seven in ten** understand that a PSPS means "for areas at a higher risk of fast-spreading catastrophic wildfires, the utility will proactively shut off power during extreme and dangerous weather," in line with June 2022.
- **Just over two in five (43%)** are aware they can update their contact information with BVES, consistent with June 2022 results (37%); among Recallers awareness is higher than among Non-Recallers (57% vs 32%).
- **Three in five (61%)** of those aware they can update their information have done so.
- **Nearly one in five know whether their address is in a PSPS area** (16%), consistent with June 2022 (18%).
- Recallers are significantly more likely than Non-Recallers to indicate awareness of whether their address is in a PSPS area (24% vs 9%) and awareness of the PSPS map (17% vs 5%).
- The **largest concerns and perceived challenges in the event of an extended power outage include heating/cooling (72%), food replacement (55%), and communication (43%)**.
- Mentions of heating/cooling as a perceived concern or challenge increased significantly since June 2022 (72% vs.47%), while mentions of food replacement decreased significantly since June 2022 (55% vs 67%)

2022 PSPS Survey Results

Key Survey Takeaways

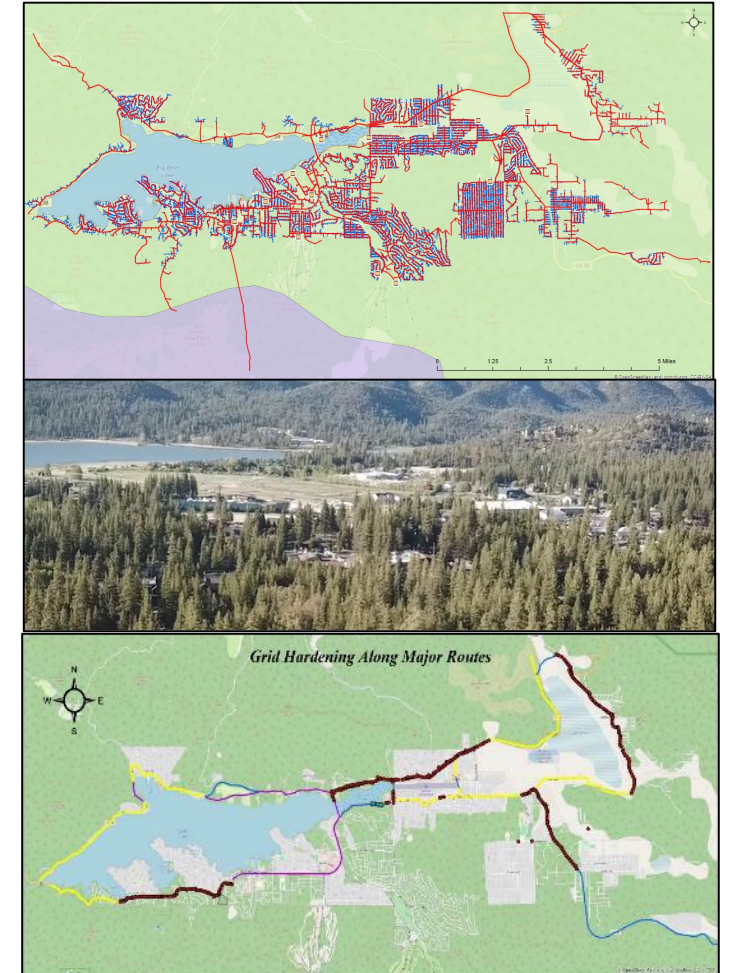
- BVES must improve the way it promotes awareness of wildfire safety and PSPS. Eight in ten survey responders have taken actions to prepare for wildfire season, less than half were aware of any communications or PSPS.
- BVES must improve its messaging on its efforts to reduce the risk of wildfire, focusing on utility corridor access and clearance, inspections by air and ground, investing in covered conductors, wood pole alternatives, additional control devices, and weather monitoring points. The survey demonstrate that these elements continue to have substantially lower awareness among survey responders than pruning vegetation.
- BVES must increased messaging around personal emergency preparations, such as awareness of preparing an emergency kit and readiness plan lags well behind property preparations such as vegetation management and defensible space. The percentage of customers who prepared an emergency readiness plan decreased significantly since June 2022.
- BVES should continue increase messaging by utilizing additional direct mail, email, BVES website, social media, and bill inserts as channels for communications about wildfire preparedness and safety. Information channels such as direct communications from BVES or social media should link to more comprehensive information on the BVES website.
- BVES should increase leveraging TV news, radio, the BVES website, bill inserts, and email to educate consumers about PSPS, and focus campaigns around late spring/early summer when preparation for fire season is top of mind in the community. BVES should partner with other agencies to speak at events or hand out materials related to fire safety and PSPS.
- BVES should continue to evaluate its strategy used to reach those with medical conditions requiring electricity, since many responders were not aware of BVES additional notices prior to a PSPS event.



BVES did not invoke any PSPS events; as such, BVES did not receive any customer complaints regarding the issue.

Fast Trip

- BVES does not have a program that involves switching device trip settings based on environmental conditions or other factors.
 - For over 20 years, it has been BVES's policy to use the fast trip curve setting on all of its devices due to being located in a high fire risk area.
 - Comparison of BVES's outage data to other California and U.S. utilities for the last 10 years does not indicate this policy resulted in increased outages.
 - For over 20 years, BVES has not experienced any reportable ignitions.
 - Most BVES customers are residential or small commercial. Therefore, it would be rare for customer equipment to cause an over current driven trip.
- Identify any interactions between PSPS and Fast Trip
 - Since BVES uses the fast trip curve on all protective devices, BVES does not have any meaningful information on this issue.
- Share the correlations between PSPS usage, fast trip applications, ignitions, and weather impact.
 - BVES has never invoked a PSPS event. Additionally, as noted above, BVES only uses the fast trip curves; therefore BVES cannot provide a meaningful correlation.
- Difference in mitigation efforts between Fast Trip and PSPS
 - PSPS is a measure of last resort in a cascading sequence of several operational measures taken based on forecasted conditions and actual degrading conditions in field.
 - Fast trip provides an automatic de-energization response to any fault that activates the trip setting. Many faults are also potential ignition sources.



Lessons learned in 2022

- BVES did not invoke any PSPS events in 2022 so there are no lessons learned from actual events.
- BVES implemented Technosylva's Wildfire Analyst Enterprise (WFA-E) which provides very localized wildfire risk information on each point along BVES's circuits.
 - This allows BVES to decrease potential PSPS areas.
 - Additionally, because the BVES service area is small, we are able to perform on site investigations "red" – high risk – circuit segments.
- BVES has learned quite a lot from the Access and Functional Needs/Joint IOU Statewide Council meetings.
 - One key concept is that the AFN community is very dynamic. People enter and exit the AFN population constantly so the efforts to identify AFN persons must be ongoing.
 - Another key concept is that AFN populations are very diverse in the way loss of power impacts them.
- From the 2022 table top, some actions in BVES's PSPS Policy and Procedures were omitted until senior management reminded staff to ensure all actions required by the procedures are taken.
- BVES has vastly improved the processes it utilizes to update its PSPS portal and communications with key stakeholders and customers.

Looking forward to 2023

- BVES will be relying heavily on the Technosylva WFA-E application.
- BVES is working with Technosylva to develop a Fire Potential Index (FPI).
- BVES has updated its PSPS Policies and Procedures to include process improvements.
- BVES has a training schedule that includes tabletop and full-scale exercises. These will include outside organization participation.
- While historical weather has not supported invoking PSPS, BVES will be ready to use this measure of last resort.
 - The weather this winter proved to be an anomaly; therefore, we should be ready for a fire season (probably a late fire season) that may be challenging.

BVES Joint IOUs' 2022 PSPS Post Season Workshop

Question?



Our Values

In pursuing our mission, the board of directors, management and the company's employees are guided by the shared Values presented below:

Integrity - Building trust through honest communications and doing what is right

Teamwork - Maximizing efficiency through collaboration and individual strengths

Respect - Valuing diversity and treating all stakeholders with fairness

Excellence in Service - Striving for excellence and quality in everything we do

Accountability - Taking ownership of one's actions