

## **PREVENTION, RESPONSE AND RECOVERY TIMELINE**

### **December 5, 2016**

Bend-La Pine Schools maintenance staff begin working to remove snow from our school grounds as the first snowflakes of the winter season began to fall.

### **December 8, 2016**

The effects of the first significant snowfall of the year begin to impact area roadways and the district calls for a 15-minute early release for middle and high school students to allow teen and bus drivers more time to navigate the quickly changing conditions affecting roadways.

### **December 13, 2016**

The second significant snowfall hits Central Oregon. Crews begin working full time to clear snow from school sites.

### **December 14, 2016**

School is canceled on December 14 due to the snow accumulations that make removal from area roadways a significant challenge.

### **December 15, 2016**

School is canceled on December 15 due to the snow accumulations that make removal from area roadways a significant challenge.

Three crew members are called to Cascade Middle School to clear roof drains of ice and snow. They each spend three hours shoveling snow from areas on the school roof.

### **December 16, 2016**

After heat tape fails on the roof, crew members are called to Kingston School to clear snow and ice from around roof drains and scuppers with snow shovels. An electrician returns on December 19 to spend the entire day removing snow and remedying the heat tape issue.

Two crew members respond to Sky View Middle School to remove snow from the roof with shovels after leaks are reported inside the cafeteria. They spend five hours remedying the issue.

Three crew members work at Cascade Middle School to clear snow from around drains on the roof to prevent leaking issues and ice damming. They spend two hours on the school roof.

One crew member heads to Marshall High School to spend an hour clearing snow and ice from trouble spots on the roof. Two men return on December 19 to remove more snow and ice and resolve the issue.

With leaks reported at Bend Senior High School, one man spends five hours clearing snow from around drains on the roof with a shovel.

**December 19, 2016**

The two-week winter break begins. With snow beginning to accumulate with intemperance on school parking lots, bus loops and sidewalks, crews begin working daily through the break, including weekends, to keep up with the ever-increasing snow buildup.

Two crew members return to Sky View Middle School after new leaks appear in the cafeteria. After two hours of work with snow rakes and shovels to remove snow and ice from the roof, the issue is resolved.

Two men work with snow rakes and shovels for four hours to clear snow and ice from the rooftop of Mountain View High School's west gym after reports of leaks coming through windows. One crew member returns on December 20 to confirm that the issue is resolved.

**December 20, 2017**

One crew member spends two hours clearing snow and ice from the Kenwood gym roof with a shovel after leaks appear in the gym. A team member returns on December 21 to confirm that the issue is resolved.

**December 28, 2016**

Crews begin clearing snow and ice from the Three Rivers School roof using snow rakes and shovels, due to leaks in the library.

**January 2, 2017**

Maintenance crew members are joined by additional team members as they begin working day and night – 20 hours a day – to keep up with the snow falling as a result of the storm.

**January 3, 2017**

Students return to school, following their winter break.

**January 4, 2017**

School is canceled, as another storm pounds the area with snow.

**January 5, 2017**

Two electricians return to Kingston School to clear frozen roof downspouts of snow and ice after discovering an issue with heat-tape on the roof. The issue is resolved after they return power to the heat tape.

One crew member spends an hour clearing roof drains of ice and snow using a shovel at Buckingham Elementary School, after leaks are reported in classroom C22, which resolves the issue.

Two crew members spend two hours removing ice and snow with snow rakes and shovels from the roof of the north alcove, after leaks are reported at La Pine Elementary School.

Two team members spend an hour removing snow and ice accumulations with snow rakes and shovels from the roof at Three Rivers School after new leaks in the library and hallways are reported. They return on Jan. 6 for another four hours and remedy the issue.

### **January 6, 2017**

Bend-La Pine Schools calls for a two-hour delayed start for La Pine and Sunriver area schools, due to road conditions.

New leaks at Kingston School require two team members to return to remove ice and snow with shovels from the roof above the kitchen, rotunda and front conference room. One additional team member returns on January 10 and spends three hours finalizing the fix.

Crews return to Cascade Middle School to remove snow and ice with shovels, which resolves leaks in the roof over classroom D4.

### **January 9, 2017**

As snow continues to amass on school sites and another storm is forecast to drop more snow in the area, the district's roofing consultant is called to provide an assessment of school roof snow loads.

The district calls for a 15-minute early release for middle and high school students to allow teen and bus drivers more time to navigate the quickly changing conditions affecting roadways.

One team member reports to Sky View Middle School and spends two hours working on the roof to remove snow and ice dams over the cafeteria, which are causing leaks into the school. He resolves the issue.

The custodian for Thompson School spends an hour removing snow with a shovel from downspouts and scuppers on the roof.

The school custodian begins removing ice dams and snow with shovels from the roof at R.E. Jewell Elementary School.

Crews begin removing snow and ice dams from the roof on the east side of the Distribution/Warehouse building.

Crews return to Kenwood School to remove snow and ice dams with snow rakes and shovels from above classrooms 1, 2, 9 and 11 and to clear new ice dams from the roof. They will continue to monitor these leaks until the snow has melted.

One team member reports to Elk Meadow Elementary School to remove snow and ice dams with snow rakes and shovels from the roof, which was leaking in A-Hall at Elk Meadow. Once the snow and ice is removed from trouble areas, the issue is resolved.

One crew member spends three hours at Kingston School clearing snow and ice from the roof with a snow shovel after new roof leaks are reported.

**January 10, 2017**

School is canceled as local agencies struggle to keep roadways passable as more snow continues to fall in the Bend and south county areas.

**11:07 a.m.** A-TECH Northwest, a roofing consultant, who was called on January 9, responds back with a structural engineer's recommendation to begin removing snow depths more than 1.5 to 2 feet of snow.

Two men spend an hour clearing roof drains of ice and snow, which are causing leaks, at Ensworth Elementary. The leaks are eliminated after this work.

After leaks are reported above the Athletic Office at Summit High Schools, two men spend four hours on the roof clearing the roof drains that were contributing to leaks of snow and ice.

**January 11, 2017**

School is canceled as local agencies struggle to keep roadways passable as more snow continues to fall in the Bend and south county areas.

**7:00 a.m.** With school not in session for students, crews clear roofs based on priority of leaks and other structural issues/concerns.

With knowledge that the roof drain on the Kenwood library rooftop habitually freezes up, two crew members spend eight hours and another spends four hours, doing preventative snow and ice removal on the roof.

Two crew members spend eight hours at Pilot Butte Middle School removing snow from the gym roof, using two snow blowers, to reduce snow load.

Crews continue to remove snow from school sites across the district.

This was the first time in known history that crews were dispatched to remove snow from Bend area school roofs. (Records indicate that even during the historic 1992-93 snow storms, no snow was removed from roofs of Bend-area schools. The only school that had snow removed during the 1992-93 storms was La Pine High School.)

**January 12, 2017**

**7:00 a.m.** Teams are on the La Pine High School roof with five snow blowers beginning to remove snow from flat rooftops.

**7:00 a.m.** Just before 7:00 a.m., a report of a concern at Kenwood's gym is called into the Executive Director of Facilities. He and the Custodial Supervisor drive to the site and discover that the roof has collapsed. It is estimated that 24-30 inches of snow had accumulated on the roof, potentially more where snow had drifted.

**7:25 a.m.** Superintendent Shay Mikalson makes the decision to cancel school districtwide for Thursday, January 12 and Friday, January 13. The executive team is alerted and the Bend-La Pine Schools mass notification process is activated.

**7:56 a.m.** An emergency communication is sent to families and media with school closure information. Information is also shared on the district website and social media channels and via a media release.

**Morning** Staff begin reporting possible roofing concerns at the Education Center, Buckingham Elementary School, Juniper Elementary School, La Pine High School, and R.E. Jewell Elementary School. Students at some Bend area schools are moved out of their buildings and placed on school buses as a safety precaution. They are reunified with parents from the buses or driven home, with parent permission, via school bus.

**10:00 a.m.** A roofing consultant and structural engineers are added to the district's contractor team and begin emergency assessments for structural integrity at all district properties.

**10:55 a.m.** All students and staff are evacuated from facilities districtwide by 10:55 a.m. The district emergency response team is cleared to work from Pacific Crest Middle School. All buildings are clear and closed. The team is joined by members of the Bend police and fire departments.

**11:03 a.m.** A text message alert is sent letting families know students were cleared of buildings at 10:55 a.m.

**12:20 p.m.** A press release lets media know schools have been cleared and are closed and provides the community more details of the unfolding situation.

**Afternoon** R.E. Jewell Elementary School is flagged by structural engineers as having structural issues.

**Afternoon** Emergency responders call for demolition crews to take down the Kenwood gym as a safety measure, as they believe leaving the partially collapsed gym standing is a significant safety issue. Department of Environmental Quality is also on site and supported the emergency demolition of the building. Roofing material samples are collected for asbestos testing.

**3:00 p.m.** The Deschutes County Joint Information Center report that Bend area homes and commercial properties are experiencing roof collapses.

**5:00 p.m.** Roof assessments are complete for Thompson School, Kenwood School, Ensworth Elementary School, Education Center, La Pine Elementary School, La Pine Middle School, Rosland Elementary School, La Pine Transportation, La Pine High School, R.E. Jewell Elementary School, Bear Creek Elementary School, Buckingham Elementary School, Mountain View High School, Marshall High School, Cascade Middle School, Kingston School, Transportation, Distribution, Ponderosa Elementary School, Pacific Crest Middle School and updates are delivered during stand-up meeting with structural engineers and district leadership.

Pilot Butte Middle School, Juniper Elementary School and Bend Senior High School assessments are started, but not completed.

**6:00 p.m.** A review of records shows that the Kenwood gym had no structural upgrades since it was built in 1950. Results of the Sites and Facilities review of all school roofs in 2015, by A-TECH Northwest, rated the roof condition as poor, but did not identify any potential structural issues with the Kenwood gym roof.

### **January 13, 2017**

**8:00 a.m.** Crews continue to work to clear snow from more than 2 million square feet of roofs across Bend-La Pine Schools. More than 100 staff members and local contractors are at school sites clearing roofs. Structural engineers and staff also continue to inspect facilities and roofs throughout the district.

**1:00 p.m.** A letter from Superintendent Shay Mikalson is published via district website and social media channels to keep the community informed of progress.

**3:30 p.m.** An update to staff and the community is released via web, social media and media.

**5:00 p.m.** Facility updates are delivered during a stand-up meeting with structural engineers and district leadership.

Facilities assessed by structural engineers today include: Pilot Butte Middle School, Juniper Elementary School, Bend Senior High School, REALMS, Tamarack, Transition Co-op, Bend International School, Elk Meadow Elementary School, High Lakes Elementary School, Lava Ridge Elementary School, W.E. Miller Elementary School, Pine Ridge Elementary School, Silver Rail Elementary School, Three Rivers School, Maintenance, High Desert Middle School, Sky View Middle School and Summit High School. This completes all initial facility assessments by structural engineers.

R.E. Jewell Elementary School remains the only school building or facility assessed to have structural damage.

### **January 14, 2017**

**8:00 a.m.** Crews continue to work long hours to clear snow from Bend-La Pine Schools' roofs.

**4:00 p.m.** During stand-up meeting with structural engineers and district leadership it is learned that snow removal was underway on rooftops around the district. Snow is scheduled to be cleared in the coming days.

**5:15 p.m.** An update to staff and the community is released via web, social media, and media.

### **January 15, 2017**

**8:00 a.m.** Maintenance and custodial crews, in partnership with local contractors, work throughout the day again today to continue clearing snow from Bend-La Pine Schools' rooftops.

**8:00 a.m.** Structural repairs begin at R.E. Jewell Elementary School. Vertical and diagonal sections of existing web trusses that had cracked due to snow load have to be replaced. These wood beams are replaced with steel members.

**4:00 p.m.** Daily stand-up meeting with structural engineers and district leadership.

**6:00 p.m.** An update to staff and the community is released via web, social media, email and media.

### **January 16, 2017**

**8:00 a.m.** More than 180 personnel, including maintenance and custodial staff members and local contractors, continue to work to clear snow from Bend-La Pine Schools' roofs and away from buildings.

**8:00 a.m.** Insurance adjustors arrive at Kenwood School.

**8:00 a.m.** In preparation for anticipated flooding concerns, seven excavation contractors are contacted and begin to mobilize in preparation for the next wave of weather challenges by removing snow accumulations away from school buildings.

**4:00 p.m.** Daily stand-up meeting with structural engineers and district leadership. Team determines that sufficient snow had not yet been cleared from rooftops to allow for occupancy. Additionally, snow being removed from rooftops has significantly accumulated around the perimeter of buildings. Time is needed to have contractors move snow away from our facilities to allow access to buildings and to meet State Fire Marshal code.

Additionally, the two sites that house the district production kitchens are not ready, which would have meant that district staff could not have provided school meals.

**6:00 p.m.** The nightly update to staff and the community is released via web, social media, email and media.

**10:00 p.m.** The district releases FAQ on its website and social media channels.

### **January 17**

**8:00 a.m.** More than 180 personnel, including maintenance and custodial staff members and local contractors, continue to work to clear snow from Bend-La Pine Schools' roofs and away from buildings.

**Morning** Report is returned to Bend-La Pine Schools that states the roofing materials at Kenwood's gym did not contain asbestos, according to testing by Paulsen Environmental Consulting, Inc.

According to Steve Paulsen, "Because of ongoing remodels and abatements over the last 30 years, the only remaining suspect asbestos-containing materials in the gym building was the roof - it was tested and no asbestos was found."

The Kenwood AHERA Management Plan is made available for review at the Maintenance Office.

**4:00 p.m.** Daily stand-up meeting with structural engineers and district leadership. Determined that the following 30 schools, programs, and facilities are cleared for occupancy and would open at their regular time starting Wednesday, January 18: Administration Building—Education Center, Thompson School, Bear Creek Elementary School, Buckingham Elementary School, Ensworth Elementary School, High Lakes Elementary School, Kenwood School, Juniper Elementary School, La Pine Elementary School, R.E. Jewell Elementary School, Rosland Elementary School, Silver Rail Elementary School, Three Rivers School, Kingston School, Cascade Middle School, High Desert Middle School, La Pine Middle School, Sky View Middle School, Bend Senior High School, La Pine High School, Marshall High School, Mountain View High School, Summit High School, Tamarack, Transition Co-op, Maintenance, Transportation - Bend, Transportation - La Pine, Warehouse/Distribution and Bend International School.

**6:00 p.m.** An update, letter from Superintendent Shay Mikalson, and updated FAQs are shared via social media, email and media. A separate, school-specific letter is sent to families from Kenwood and R.E. Jewell elementary schools.

**Evening** R.E. Jewell Elementary repairs are completed; this includes installation of new vertical and diagonal sections of web trusses and structural posts. Structural engineers and City of Bend staffers deemed the school sound and ready to re-open.

#### **January 18, 2017**

**8:00 a.m.** Teams continue to work to clear snow from Bend-La Pine Schools' rooftops and away from buildings.

**4:00 p.m.** Daily stand-up meeting with structural engineers and district leadership. Determine that four additional schools, programs, and facilities are cleared for occupancy and will open at their regular time starting Thursday, January 19: Lava Ridge Elementary School, Ponderosa Elementary School, Pacific Crest Middle School and REALMS.

The following four schools would remain closed to allow for continued snow removal: Elk Meadow Elementary School, Pine Ridge Elementary School, W.E. Miller Elementary School and Pilot Butte Middle School.

**4:42 p.m.** The nightly update to parents, staff and the community is released via web, social media, email and media.

#### **January 19, 2017**

**6:00 a.m.** Contractors continue to work to clear snow from Bend-La Pine Schools' roofs and away from buildings.

**7:00 a.m.** A new daily protocol is implemented for custodians:

*Outdoors:*



Continue to knock down icicles and clear ice dams as they build up around entrances and walkways. Continue to keep roof drains clear and ensure there are no ice dams on eaves. Continue to remove snow away from buildings.

*At schools with upper roofs that can shed snow onto lower roofs:* Before school each morning, and again after school, check for excessive sliding or drifting with concentrated snow loads that may be in the valleys or built up behind obstructions.

*At schools with flat roofs:* Check scuppers and downspouts to confirm water is flowing and clear any ice or snow blockage.

*Indoors:* Monitor any interior roof leaks and identify location on top of roof in order to clear ice damming, check for drywall cracks or ceiling tile sagging.

**4:00 p.m.** Daily stand-up meeting with structural engineers and district leadership. All schools, programs, and facilities are cleared to re-open on Friday, January 20.

**6:00 p.m.** The nightly update to staff and the community is released via web, social media, email and media.

#### **January 20, 2017**

**8:00** Crews continue to remove snow from Elk Meadow Elementary and W.E. Miller Elementary schools' roofs while contractor teams continue to remove snow from around buildings and in parking lots through January 22.

#### **January 23, 2017**

**8:00** Bend-La Pine Schools anticipates continuing to remove snow from school sites through February.

**10:00 a.m.** The Oregon Emergency Management Incident Damage Assessment is forwarded to Deschutes County Emergency Management for FEMA Public Assistance funding consideration.