As seas rise, 3.5 trillion pounds of sprawl push land down, scientist shows

By Kurtis Alexander

It’s not just San Francisco’s Millennium Tower that’s sinking. The entire Bay Area is plunging downward under the weight of its own sprawl. And that’s a concern as sea levels rise and cities try to figure out how they’ll stay above water in the coming decades.

Tom Parsons, a geophysicist with the U.S. Geologic Survey, documented the problem recently. He calculated the weight of every building in the Bay Area and found the total to be so great, about 3.5 trillion pounds or the equivalent of more than 7 million Boeing 747s, that it’s pushing the Earth’s surface down. His research shows the region has sunk as much as 3.1 inches, on average, as a result.

His research shows the region has the equivalent of more than 7 million Boeing 747s, or 3.5 trillion pounds, under the weight of its own sprawl. And that’s a concern as sea levels rise and cities are forced to deal with the strain.

As of 9:45 p.m. Wednesday, 48,357 doses of the Moderna vaccine had been administered in California. The state had received 27,896,042 doses to date. The national average is 74.9%.

### BUILDINGS EXERTING THE MOST PRESSURE

- 50 California St.
- Millennium Tower
- 345 California Center
- 101 California
- Salesforce Tower
- One Rincon Hill
- 44 Montgomery
- 555 California St.
- 225 Bush St., Standard Oil Building

Source: AGU Advances

### Pressure is building

A look at the 10 buildings applying the most pressure to Earth’s surface in downtown San Francisco. Giant developments across the Bay Area are resulting in subsidence. See the graphic on A15 for a look at the areas most affected.

### Cable car restart remains uncertain

Muni juggles funding, safety, staffing concerns

By Mallory Moench and Michael Cabanatuan

As San Francisco’s landmark cable cars return to service, there are questions about when the cars will return and how the transportation system will roll back staffing concerns.

Muni officials are also contemplating whether to make a major rehabilitation work in the Cable Car Barn before resuming cable car service. Supervisor Aaron Peskin told The Chronicle a project involving the system that pulls the cables beneath city streets can be done only when the cable cars aren’t operating, he said, and might be more easily done during the pandemic.

“If we’re really going to get back on our feet and welcome tourists back, it remains uncertain what that will mean for the rest of the system,” he said. “But we know that the cars will return, and what will mean for the rest of the system is unclear.”

### Coronavirus update

As of 6:45 a.m. Thursday: 6,496,140 doses administered, 6,722,400 doses available

### Bay Area

- Bay Area: 1,492,468 doses administered, 27,896,042 doses available
- California: 4,398,719 doses administered, 16,540,862 doses available
- United States: 389,027 doses administered, 493,082 doses available

### Weather