Wildfires are already a serious problem, and climate change will only make the problem worse, as I've discussed in my two prior posts. Reducing carbon emissions can help keep the problem from growing, but we need to deal with the risks we're already facing. That is going to require a portfolio of risk management strategies. We need to ramp up all of them.

Land Use Controls.

There are increasing numbers of people moving into the wild-land urban interface (WUI).The USDA's report on the WUI says that 3.8 million people live in that zone in California alone. Nationally, a million homes were added to the WUI just in the decade from 1990-2000. That simply isn't sustainable.

Human activities increase the risk of fire from sparks or burns, and homes are typically highly flammable and help fires spread more quickly. Better land use controls could limit development in high risk areas. Easier said than done, however, given development pressures. According to a 2013 study, " land use planning for wildfire has yet to gain traction in practice, particularly in the United States. However, fire history has been used to help define land zoning for fire planning in Italy, and bushfire hazard maps are integrated into planning policy in Victoria, Australia." By 2016, however, Headwaters Economics was reporting on five Western US cities that were taking advantage of at least some land use tools to reduce fire risks, though none seem to have imposed outright bans on development in high-risk areas.

Buyouts may be a fallback in extreme situations. Building codes can also help — for instance, by requiring fire-resistant roofs on new houses. Liability rules for fires have to be carefully considered. Making utilities liable for fires can cause them to take greater precautions, but the prospect of compensation could also encourage people to live in unsafe areas. On the other hand, fire insurance costs can send an important price signal about the risks of WUI property ownership, as some Californians are already beginning to experience.

Land Management.

Vegetation removal, both in forests and in the WUI, can reduce the likelihood of fires and slow their spread. The trouble is that this gets harder all the time. In California, the fire zone has doubled, now including nearly half of the state, and there are said to be nine million acres where the risk is intensified by dead trees due to drought or bark beetles. Obviously, a much greater effort is going to be

needed, and care has to be taken to minimize the environmental impacts of the vegetation removal. According to the Headwaters Economics report mentioned earlier, some localities are starting to push owners and developers toward vegetation removal. Where I live in Oakland, inspectors come around every year to check out the vegetation in each yard. And, in addition to the measures discussed below, utilities are also becoming more aggressive about vegetation removal.

Utility Precautions.

Wildfires can be started by downed power lines, a cause of the 2017 California Wine Country fires. Utilities have automatic shut-offs when lines go down, but they also have automatic reclosers to restart them. Those reclosers should be shut off during fire season. But experts say the failure to do so or provide for human oversight has contributed to major fires in California and elsewhere. Undergrounding wires or replacing wooden poles with steel ones, which some utilities have done in fire prone areas, also help. According to Utility Dive, San Diego Gas & Electric has been a leader on wildfire prevention. Among other things, it maps the hundreds of thousands of trees in high risk fire zones. It has its own network of 172 weather stations delivering data every ten minutes, using the data to run millions of simulations to forecast risks. This effort may provide a model of best practices for other utilities.

Emergency Response.

When all else fails and fires spread, emergency response is crucial to saving lives and homes. A lot more work needs to be done on this.

The Sonoma County fire of 2017, which killed forty-four and destroyed almost nine thousand buildings, revealed serious flaws in fire response. As the San Jose Mercury News reports, the state's Office of Emergency Services, which investigated the response, was sharply critical of local efforts:

"Officials in Sonoma County were ill-prepared, disorganized and lacked sufficient training when deadly, fast-moving wildfires broke out last October endangering about 100,000 people. . . . [M]ultiple alert systems in Sonoma County, overlapping responsibilities and a failure to map out roles in an emergency appear to have resulted in duplication, inconsistency and some confusion in messages transmitted to the public."

Basically, it’s hard for evacuation orders to keep up with rapidly spreading fires. Legislators have called for up-dating of warning systems and changing the system so that residents have to opt out if they don’t want warnings rather than having to opt in if they do.

In the 2018 fire season, other problems surfaced. The SF Chronicle reported that in the last week of July alone, requests for 900 engines were unfilled in a breakdown of the mutual-aid system between localities. Although the mutual-aid system is well regarded by experts, there are limits to its capacity. The system needs more funding.

The fact is that wildfires are part of the “new normal.” We’re going to have to up our game to deal with this much higher level of risk. The strategies discussed here are the starting points.