Harborton Reliability Project Work Schedule:
- 5/1/25-9/1/25 Construction Season 1 - Access Roads and Site Development
- 10/1/25-4/1/26 No Work: Stabalized for Winter
- 5/1/26-9/1/26 Construction Season 2 - Powerline Construction
- 10/1/26-5/1/27 Site Restoration, Mitigation Installation
- 5/1/27-12/1/27 Periodic Monitoring, Reporting
- END DATE TBD

Public Meetings:
PGE will hold a series of meetings to share more information about the project. All meetings will open at 6:15 p.m. with a brief presentation at 6:30 p.m. followed by opportunities to engage with subject matter experts about the project, planning and impacts. At the time of publishing, two of these meetings have already happened. We are unsure of how they went, but hope it wasn't smooth!

- Wednesday August 7 at Skyline Grange Hall, 11275 NW Skyline Blvd., Portland
- Tuesday September 24 at Linnton Community Center, 10614 NW St. Helens Rd., Portland
- Thursday October 24 at Linnton Community Center, 10614 NW St. Helens Rd., Portland}

Harborton Reliability Project Map. Solid=existing power lines, dashed=proposed expansion

AGAINST THE SILICON FOREST

September 2024

Silicon Forest (n): A high-tech industrial corridor in the Portland Metro area, primarily Beaverton and Hillsboro, known for its concentration of tech companies fabricating and applying semiconductors such as Intel, Tektronix, IBM, Hewlett-Packard, and more.

Hardware, software, facilities and service components need consistent maintenance as they inevitability get worn down by the elements, become obsolete due to industry advancements, and require more capacity as the demand for more technology ever accelerates. These requirements offer countless vulnerable junctures in the system. It's not possible for everything to be monitored or safeguarded everywhere all at once. When industry is brought to a stand still, its hold on our lives begins to unravel. How can we bring these moments into reality? Our intention is to contribute to a struggle against the technological progress and its devastating consequences here in the PNW and beyond. Instead of waiting for someone else to organize the same old protest or for some official organization to announce a campaign, each of us can begin to experiment with creative approaches to fighting back. It's commonly said that it is easier to imagine the end of the world than to imagine the end of capitalism. They want us to believe inside of our souls that we can't do anything about the force of technological progress, that to fight back would be futile, and that all we can do is submit. By identifying the critical choke points of the techno-industrial beast, like the Harborton Reliability Project, and proposing an autonomous and decentralized struggle against them, we can start to attack this monster. When will you begin?

that they are -only- destroying 5 out of the 5,200 acres, as if that is any consolation for the irreversible damage that requires. PGE reassures consumers that they are "committed to improving habitat, tree canopy, and wildlife corridors" during and after the project. Whatever flashy plans that PGE has for post-development ecological improvements, the fact of the matter is that the trees cannot grow back, the habitats cannot be saved, and the soil diversity cannot be restored within a powerline corridor that is, by definition, tree-less. There is no environmentally-sustainable or ethical way to clearcut a forest, and there is no way to implement the power structures needed to support technological progression without clearcuts. Whatever their public relations argue, PGE, and power/tech companies everywhere are in the business of destroying these habitats, not protecting them, and anything they say that suggests otherwise is simply lip-service in the name of green capitalism.

What To Do

The current project of infrastructural expansion in the PNW is but one circuit in the mega machine. The expansion in Forest Park is intertwined with the bigger picture of tech domination in which companies and the State hope to achieve new capacities of surveillance and control. For the empire of the United States, becoming self-sufficient in technological manufacturing is crucial to achieving these goals. It's not just the endangerment of the Red Legged Frog or the horror of seeing the forest be further destroyed that inspires us to oppose this expansion. Fixating on single issues rather than addressing the big picture splits our focus and reduces the potential for impact. Technological progress and its expansions endanger all forms of life on Earth.

The state government wants to convince these companies that Oregon is the ideal place for them to set up shop; we can change that balance and be a factor that they can't get past. Tech giants attempt to obscure their actions and intentions by building their factories and research centers before we even know it's happening, let alone have any time to prevent it. Infrastructure analysts have stated their fears around just how vulnerable current tech infrastructure is. They talk about preparing for 'the worst' while also admitting that they can't plan for it all. *ASML*'s 2023 annual report stated, *"These facilities may be subject to disruption for reasons including work stoppages, fire, aenergy shortages, pandemic outbreaks, sabotage, or other disasters, natural or otherwise. We cannot be sure that alternative production capacity would be available if a major disruption were to occur. We are not able to fully insure our risk exposure and not all disasters are insurable."*

Technology

The speed of technological advancement feels like a train that's off the rails. What seemed like a distant dystopia even just a few years ago has passed into the regular order of the present day, whether with a bang or subtly, without most of us even noticing. A degree of skepticism and nervousness towards this dystopia in progress is permitted and even affirmed in the mainstream, as long as no one starts to question the trajectory of technological advancement which those who dreamed up this virtual reality want us to see as the unstoppable path of progress. They want us to see their digital world as being all around us, and, at the same time, nowhere at all.

The reality that we are being dissuaded from seeing through the constant notifications, entertainment, and information overload is that the Earth is being decimated to make way for this "Silicon Forest"; it is very real, material, and it's happening right now. We are standing on the precipice of a critical juncture for both the survival of all that remains wild and free, and the development of world domination. Over the past years, those in power, the old-money and start-up capitalists, their politician lackeys and the militaries at their disposal, have been laying the groundwork for a "renewable energy" industrial revolution. In reality, any possibility of halting climate change is far behind us, and those who promise solutions are only interested in the power and money that convincing us that they're our only hope can give them. For civilization to survive, they tell us, the Silicon Forest must be built, and it must be immense.

For those of us living in cities, this transformation can seem removed and abstract. We see the Teslas crowding the streets, the luxury condos and smoothie bars popping up where living neighborhoods used to be, but, as far as we can see, electricity comes from the plug and water comes from the tap. Some new factories might go up in the suburbs,- more concrete in an already asphalted environment. The "front lines" of environmental struggles are the remote areas slated for mining, pipelines, and polluting factories, rural peripheries where extractivism is the primary mode of production in order to fuel the consumption of the urban core. However, technological, manufacturing, and energy expansion are intimately connected in this green industrial revolution -- they need technology to harness the energy, energy to manufacture that technology, industry to manufacture the materials to build the infrastructure to harness, store and transport the energy, energy to power the industry, and on and on. Oh, and, of course, war to defend it, which depends on all of the above.

Since the global supply chains for these technologies, namely batteries and microchips, are primarily based in "non-allied countries", mainly China, the US government is pouring literally trillions of dollars into building out domestic supply chains in the name of national security. This means different things for different places, involving a matrix of interconnected developments taking place all over the country. The Silicon Forest is our local axis in the fight against techno-dystopia. It is one of the primary points of intersection between two Earth-destroying enterprises: industrial resource extraction and industrial manufacturing. Identifying which pieces of this process are taking place in our region, fighting where we stand, and connecting our struggles through solidarity is the best way to ensure that our forests are made of trees, not silicon.

CHIPS

In August of 2022, Biden announced the "CHIPS and Science Act" earmarking $280 billion for investment into domestic semiconductor research and production, launching a wave of new developments across not only semiconductor production, but all of the industries that prop it up. Later on, we will talk about two of these: electrical energy production and material resource extraction. The act designated 31 areas across the country as "tech hubs," specific areas with a high concentration of technological research. These include several areas of investment that are close to home in the Pacific Northwest; increased funding for the "lithium valley" not far from Oregon, for mass timber technology across the Pacific Northwest, as well as semiconductor fabs, biotechnology, energy production technology, and textile/material technology. Right now, Oregon is one of just a few hubs of semiconductor (microchip) manufacturing in the US, concentrated in the city of Hillsboro, right outside of Portland. Oregon is competing with other states to entice companies to set up shop here by offering financial incentives and massive amounts of land, water, and electricity. Significantly, the Biden administration gave $8.5 billion in funding and $11 billion in loan guarantees to Intel for semiconductor research and development. The government is keenly aware of the importance of this critical industry in the scramble for global economic and political dominance. In 1990, the U.S. produced 40% of the world's semiconductors, but that figure has since fallen to around 12%, and less than 1% of advanced microchips, which are responsible for advanced computing, smartphones, smartgrids, data center servers, autonomous vehicles, and cutting-edge commercial, industrial and military electronics.

Microchips (Integrated circuits, semiconductors) are comprised of transistors that conduct or block the passage of electrical current. Microchips are the building blocks of any computing device, including electric cars, cell phones, "smart" technology, nuclear reactors, aerospace systems, a whole host of advanced military technology such as the

profits from colonizing the land by removing its indigenous peoples, draining and leveling critical wetlands, and destroying biodiversity and hundreds of years worth of topsoil.

Hydroelectric power from the Bonneville Power Association and its dam in the Columbia River Basin is one of the main sources of energy for the Oregon power grid. Up to 200 MW of power gets delivered from BPA along the Columbia River corridor, with much of this power coming from the Bonneville Dam. There are more than 60 dams in the Columbia River Watershed which were built solely for the purpose of hydroelectric power production. Dam construction is a colonial process which has permanently altered the Pacific Northwest landscape, flooded native ancestral burial grounds and destroyed sacred sites. It has also blocked critical migration paths for salmon spawning, which is an integral part of the PNW ecosystem and the lifeways of its original inhabitants. Currently there are two main BPA lines going through Forest Park next to the PGE lines, the low powered Rivergate-Keeler (230 volt) and St. Johns-Keeler (115 volts), both lines ending up at a big interchange right outside of the Intel campus.

Not only are these "renewable" sources being peddled as great solutions to power the Silicon Forest and our lives, they are propping up Intel themselves. In another twisted circle, Intel's processing power is sold to energy producers via their Active Grid Management Architecture in computer gateway controllers which regulate power flow across wind, solar, and hydroelectric power production. This grid management technology is a major driver of microchip manufacturing.

Seeing through PGE's and Intel's rhetorical deception is the first step toward recognizing the war being waged against us by the techno-industrial megamachine. These companies tout the line of green capitalism to obscure the fact that mining for rare Earth metals and clear-cutting forests for electrical infrastructure is no different than drilling for fossil fuels——it is merely pillaging the Earth by other means. Under techno-industrial capitalism, there is no such thing as "clean" energy or "green" technology; all of it comes at the cost of untold blood, suffering and devastation.

Forest Park is home to over 550 species of birds, mammals, and invertebrates, and serves as an essential connection between the Willamette Valley and the Oregon Coastal Range biomes. It is an integral air filter and water purifier for the Portland-metro area, and one of the the largest contiguous urban forests in the U.S. The forest serves as a critical refuge for human and non-human beings alike from the harshest aspects of the concrete and industrial pollution enclosing it. PGE attempts to diminish the environmental impact of the Harborton Reliability Project on Forest Park, assuring us

Harborton Reliability Project

 Two months after Intel's $36 billion announcement, Portland General Electric (PGE) submitted a Type III land use application for its "Harborton Reliability Project". The project would upgrade an existing transmission line connecting to the Harborton substation as well as add a new power line approximately 1/4 mile long, requiring the removal of nearly 5 acres of trees in Portland's Forest Park. It is an initiative to add to the electrical transmission infrastructure traveling through Forest Park with the stated goal of adding capacity for the synthesis of hydropower coming from dams throughout the Columbia River Basin, wind turbine power from Eastern Oregon, and solar power from the Willamette Valley and Southern/South-Central Oregon. These power lines are designed to bring power to the Silicon Forest, most notably given the timing of this expansion, to Intel, whose largest operating hub lies just a short distance west of Forest Park.

 PGE's purported reasoning for their expansion is to reduce service interruptions, help meet increased demands due to heat waves, help reduce wildfire risk, and resolve a critical bottleneck in the energy grid. However, given the timeline overlap between this project proposal and Intel's, it seems very likely that the "increased demand" that PGE is referring to the massive demand necessary to power a multi-billion dollar expansion at Intel. PGE's own rhetoric about their expansion project obscures their true interests through claims that they are "helping us" weather an increasingly unstable future due to climate change, hoping that they can make us forget that it is techno-industrial projects such as these that are responsible for climate change in the first place.

 PGE acts as a conveyor belt between extraction in the rural peripheries and the techno-industrial hub in the Silicon Forest, whose limitless progress demands limitless energy. Like an ourorboran snake eating its own tail, the same energy that microchip production sucks up at an inconceivable rate also ironically requires microchips to function. Solar panels, wind turbines, compressor stations, and nuclear facilities all require microchips to draw electricity from the earth. This year, the Bureau of Land Management announced that they intend to add Oregon and Washington to what is called the Western Solar Plan, which would make one million acres of federal land available for solar energy in Oregon alone. A second source for PGE's power is the wind energy it purchases from turbines in eastern Oregon. Both solar and wind energy are inconsistently reliable, which means they are often equipped with batteries to store energy when it is available. These batteries are made of rare earth materials such as lithium, cobalt, and nickle. This is not to mention that both solar and wind farms require massive amounts of land, acting as a new arm of the industrial agriculture business that

new IVAS system (a fully integrated augmented reality headset for soldiers with built in facial recognition), and an increasingly exhaustive list of devices necessary for the smooth functioning of industrial capitalism. Standard microchips are one millimeter thick and can contain up to 30 different layers of components and wires as well as billions of microscopic transistors. Smaller than a fingernail, they are one of the most complex and precise products ever manufactured, and as such they are the pillar of our techno-dystopic present. Oregon is home to roughly 15% of the U.S.'s semiconductor workforce, with the most per capita workers in the industry of any state. Semiconductors are Oregon's largest export, and besides Intel, there are 40 other microchip companies based in Hillsboro alone.

Intel

 The same month that Intel received their CHIPS funding, they announced that they were planning on spending $36 Billion in Oregon to "modernize and expand their research and development hub in Hillsboro." In September 2023, Intel celebrated the groundbreaking construction of MSB2 – a new support building adjacent to the existing D1X fab (chip fabrication factory), Intel's largest Technology Development site. MSB2 provides an additional 35,000 square feet of clean room space, six truck docks that enabled a faster-than-ever tool install ramp for D1X, and an elevator with a 65,000-pound capacity to handle the heaviest components of the cutting-edge High Numerical Aperture Extreme Ultraviolet (EUV) lithography system. The machine, called a TWINSCAN EXE:5000, which was delivered in December of 2023 and installed April 2024, was the first of its kind to be installed and will allow for a 2.9x increase in transistor density, allowing for increased computing power in a smaller chip. This is part of what Intel is calling the "Angstrom Era" as a result of them measuring their chips using angstroms instead of nanometers. We have moved beyond the age of nanotechnology, and into something even smaller, more pervasive, and more powerful. The AI-powered surveillance and warfare of the future will be powered by chips the size of crumbs at the bottom of the bag. Intel openly strives for the continued progress of Moore's Law (the idea that the number of transistors in a chip will double every two years). To hell with their idea of progress!
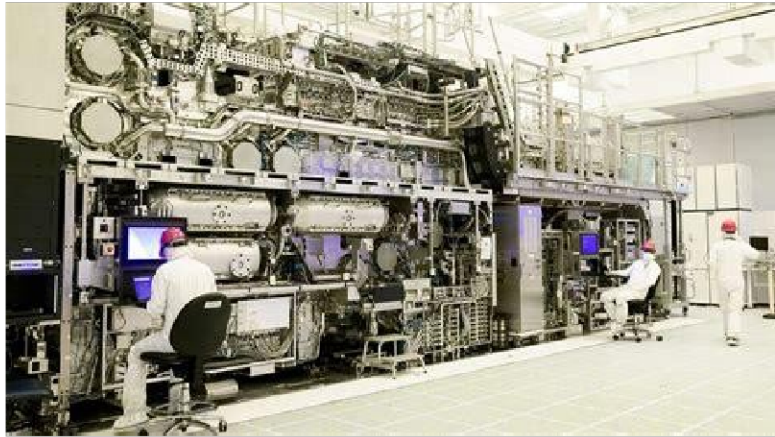
TWINSCAN EXE:5000

Impacts of Chip Expansion

Beyond producing the main components for the technology responsible for alienating us from each other and our environment, as well as facilitating increasingly advanced ways of waging war and destroying the earth, fabs such as the one proposed by Intel also have immediate destructive impacts. First is the issue of water consumption, which is necessary to cool and sanitize the extremely energy-intensive clean-room machines. An average microchip manufacturing facility can use 10 million gallons of ultrapure water per day (or 15 milllion gallons of standard municipal water), the equivalent daily water consumption of 33,000 U.S. households. In addition to water consumption, chip manufacturing also produces wastewater that contains toxic pollutants, including heavy metals.

Microchip expansion also drives mining, which is necessary to source the main chemical elements used to manufacture them. Silicon, for example, is pit-mined from quartzite quarries in China, Rusia, Brazil, Norway, and the U.S. with massive Earth-moving machines that gut and scar the land. This quartzite is then refined in furnaces that require immense amounts of electricity and coal to maintain 2,000°C temperatures. The silicon is then refined multiple times to produce the ultrapure product necessary for microchips, and is often transported to mulitiple different facilities across the globe in order to do so. Related to microchip mining is the mining necessary to power the batteries that microchips rarely function without. These batteries also store the solar and

wind energy that powers PGE and other grid lines (Currently, battery capacity is not large enough to store enough energy to maintain consistent power supplies. This is partially why lithium batteries are undergoing so much research and development). Two main extractivist industries that batteries rely on are lithium and cobalt mining, which are wreaking havoc on both the land and communities. Cobalt is primarily extracted by Chinese-owned companies in the Democratic Republic of Congo through enslaved and exploited labor, and has fueled wars that have claimed millions of lives, while lithium is being extracted from Indigenous Mapuche, Aymara, and Quechua lands in South America as well as Paiute, Shoshone and Bannock lands at Thacker Pass and the "lithium valley" in so-called Nevada.

There is also the inherent destruction necessary for land development itself. To consider a new factory, microchip companies want more than 500 acres of flat industrial land that sits within 90 minutes of an international airport, and within half a mile of a major highway. Since finding land for the sprawling fabs is a major obstacle, the Oregon state government has changed the laws to allow the Silicon Forest to be built on the farmland outside Hillsboro, which was previously designated for agriculture and protected from urban sprawl. A state law passed last year allows the governor to designate 8 sites where city boundaries could be expanded to make space for microchip facilities, which Tina Kotek is currently moving to enact for the first time, proposing expanding the city boundaries to make space for a major new research center. Contrary to its green aesthetic, the "Silicon Forest" requires the clearcutting and removal of forests in the Portland-metro area for its massive infrastructural empire. Aided by the State, technoindustrial companies such as Intel act as a colonizing force upon already-stolen land.

This colonial project extends beyond the borders of Oregon and of Turtle Island. Intel's tech empire is international, and one of its largest hubs outside of the so-called U.S. is in apartheid Israel/occupied Palestine, which dates back over 50 years and represents the first Intel facility built outside of the U.S.. It is one of the largest companies in Israel's market, generating over $8.7 billion in exports as of 2022, representing 5.5% of high-tech exports from Israel and 1.75% of the country's GDP. The race for tech expansion goes hand in hand with the project of colonization, in fact they mutually rely on one another for the shared project of domination over land and over human and non-human beings. War is one of the most profitable endeavors a State can engage in, and the age of AI-powered drone weaponry and computerized combat is already here. Tech companies are incentivized to support the war industry because of the multi-billion-dollar contracts they provide, and the State is incentivized to support the tech industry in order to ensure access to the most cutting-edge killing technology.