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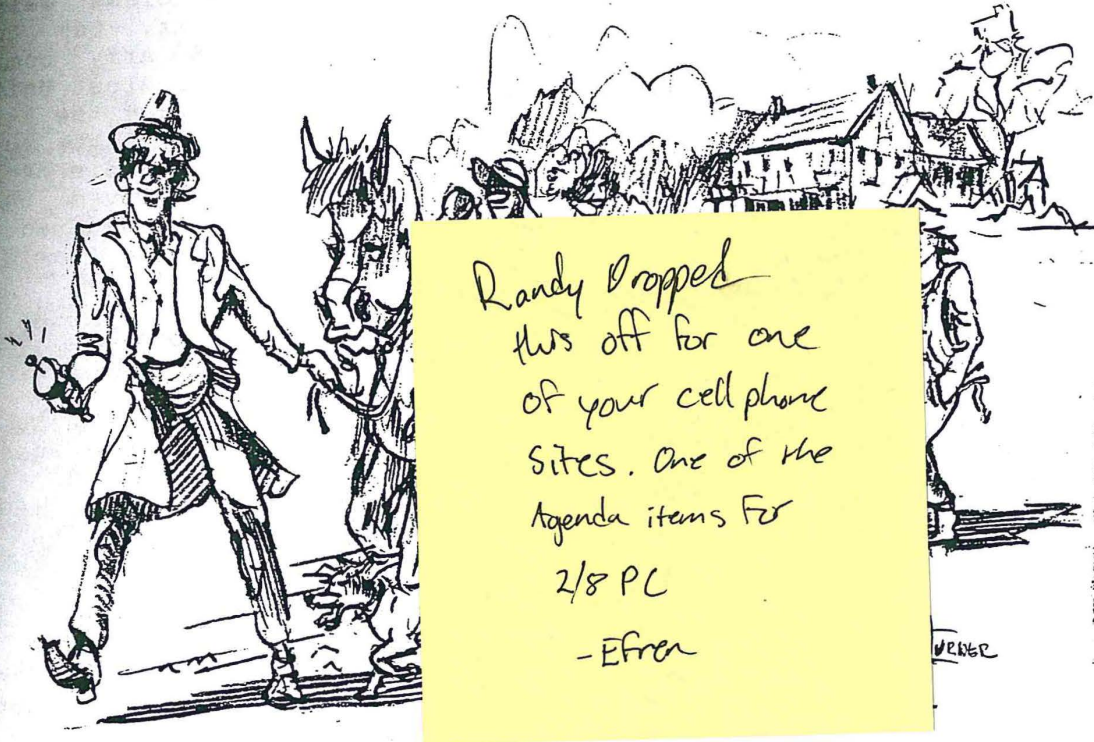
30 Pages

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HOW ABOUT THAT! #1, 2, 3.

EL DORADO COUNTY
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Randy dropped
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2/8 PC
-Efron

MR. LEM, AND THE NEWTOWN SCHOOL CHILDREN

From the first Newtown School came the murmurs of Newtown's school children reciting, and their cries at play, as long ago as 1860. It was no different in the second Newtown School, at School House flat, near the northwest corner of Newtown and Snows Road, in the 1880's when young Mr. Lem was their teacher, a gangling, restless, imaginative Pied Piper whom the boys and girls followed anywhere. As his friendly eyes darted among his thirty students of eight mixed grades, each child joined his conspiracy against the ROUTINE of school. They learned their three R's and their history having fun together. Often, they were off skipping and trotting out of doors to learn about the earth and its living things, and by hearing the stories about the 1849 Gold Rush which never was equalled in the world, seeing places where it happened, touching tools that were used, and getting acquainted with the Mormon Emigrant Trail through the soles of their feet.

Mr. Lem used big words and strange names that made the boys and girls see all kinds of people searching for new lands. If they didn't understand the things he said, the students imagined

them, seeing Roman Legions marching, the Viking ships sailing and the Forty-niners' covered wagons rolling through the clouds far beyond Newtown Ridge.

One morning, with their lunches in hand, the class walked two miles to Pleasant Valley. In a shady meadow, Mr. Lem told the children about the Mormon Battalion of the U. S. Army coming in 1847 to take California from the Mexicans for the United States. When the Mormons were honorably discharged from the Army, they worked at Sutter's Fort, and some worked in Coloma to build Sutter's Sawmill where their boss, James Marshall, discovered gold in 1848. After they panned gold nuggets and received their pay from John Sutter for a year's labor, the Mormons decided to go to Salt Lake, a place they'd never seen, where their families had settled.

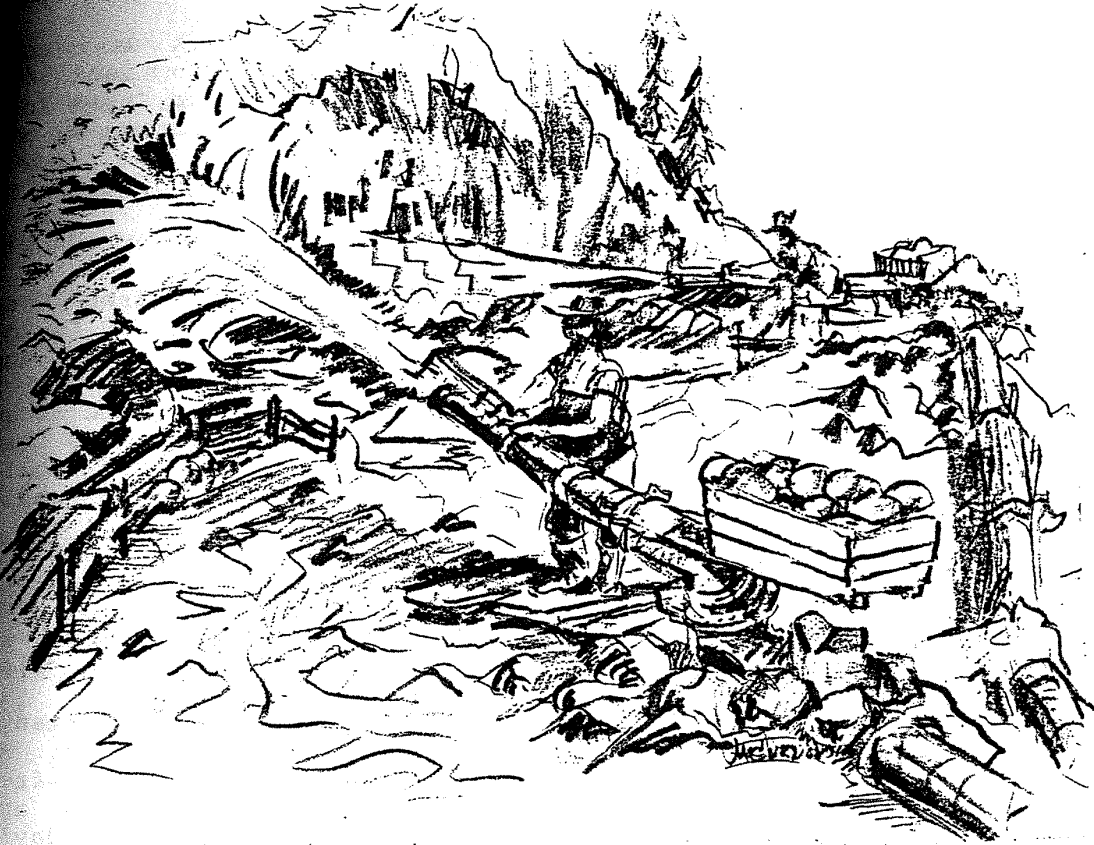
On June 18, 1848, a Mormon scout, Henry Bigler, found our local area suitable to assemble the California Mormons and their livestock for a wagon trip eastward over the Sierra Nevada. He named the assembly place Pleasant Valley.

The Newtown School children, and their teacher, Mr. Lem, ate their lunches under the Chinese Trees of Heaven near the Spencer House which was a store and hotel where dances were held.

The Spencer House was on the east side of today's Mt. Aukum Road at the intersection with Sly Park Road. After the boys had teased the girls with wiggly crayfish from Clear Creek, behind the hotel, they were shown the livery stable where horses and wagons were kept for hire, and where travelers' horses were stabled, across Mt. Aukum Road from the Hotel; but, Mr. Lem helped everyone imagine the old log and brush corral built there by Henry Bigler and his friends to hold the bands of loose horses and cattle that began arriving on June 21, 1848, with the 46 Mormons and their wagons.

As the class walked back to Newtown, and the smallest children rode on Mr. Lem's horse, he told them about another place they would visit, where the very first gold in our neighborhood was discovered.

HOW ABOUT THAT! #4, 5, 6.



NEWTOWN SCHOOL CHILDREN AT SNOW'S HYDRAULIC GOLD MINE

A series of rainy school days, a time of tiresome attention broken by classroom games, finally ended one morning when waxy buttercups reflected the sun's gold, baby blue eyes looked like scraps of sky lying all around, and green meadows were splashed with the mauve of lupines, the yellow of coreopsis and the white of forget-me-nots. The Newtown School doors and windows were flung open to the scented, warm air, and happy young hearts went exploring with their teacher, Mr. Lem.

From School House Flat, the class picked their way north through the rocky debris left by recent hydraulic mining and down to the South Fork of Weber Creek, which the Indians called, "PUL-PUL-MULL." Mr. Lem explained that, once, this rocky place (1/4 mile downstream from Snows Road) had been a large grassy area where Henry Bigler and his friends had built the second corral for the Mormons' livestock during the last weeks of June, 1848. After building the corral, Henry and his friends waited for the other Mormons to assemble in Pleasant Valley, busying themselves with panning the gold in the gravel of the South Fork. They'd

discovered the first gold to be found in our neighborhood a full year before the Gold Rush Argonauts arrived in their covered wagons to name the spot Dog Town.

Next, the students walked up the swollen creek to Snows Road, and then north up Mormon Gulch, excitedly, to look for Snow's giant monitor. They played follow-the-leader up Snows Road through Iowaville. When they passed Dr. Snow's home and some had cooled off in the little showers of water leaking from Snow's Ditch flume, overhead, they could hear the giant monitor down in the North Fork of Weber Creek at Snow's Hydraulic Mine. It was a crackling sound, from high pressure water, supplied by Snow's Ditch, as it exploded out of the monitor's nozzle.

Follow-the-leader expired as quickly as the children were overcome with the sound of the power; and, they raced down to the South Fork crossing to watch. The children could have looked and listened for hours as the piper directed the beautiful white arch of water, bursting from the nozzle, to explode against the base of a tall gravel bank just above bedrock. After a long cave was hollowed out under the bank, tons of sand and gravel would collapse to be washed through sluice boxes where the gold would settle into riffles and be collected later.

Mr. Lem knew that Dr. Snow, the owner of the hydraulic mine, favored this kind of study, and that he would let the students eat all the windfalls they wanted of his Spitzenburg apples. The doctor was the camp obstetrician, and had brought most of Newtown's children "into the world," he said, "from his fish pond," a pond where those children never sneaked a swim.

Much earlier, Dr. Snow, a Jewish immigrant from Germany, became a medical graduate in New York and migrated to Iowa. He dealt successfully with the Indians and headed a trouble-free wagon train to Pleasant Valley, in 1850, over Carson Pass and down the trail opened by the Mormon Battalion in 1848. Today's Snows Road and Snow Ridge were named in remembrance of this pioneer gentleman.

Lunches shared and eaten, the mid-day spent, the class turned back toward Newtown and some special fun along the way.

While the children were returning to school from Dr. Snow's hydraulic mine on the North Fork of Weber Creek, a mine which produced more gold than any other in Newtown, Mr. Lem helped the children imagine how Newtown got its name and was established some 35 years earlier, back in 1852. The children became actors, playing a group of discontented Dog Town citizens who wanted a warmer and safer place to build permanent houses and stores. Israel Clyde (or Clapp), who was said to be the leader of the discontented people, claimed he had a prophetic thumb. He was played by the school's best actor. He told his Dog Town followers he would lead them to a better place, that he'd know when they reached the place when his thumb prickled. So, all the actors and actresses packed their imaginary goods into imaginary wagons and started out from Dog Town on the trail to Placerville. The followers had gone no more than 1/2 mile southwest, up on a bench of land 100 feet higher than the creek, when Israel's thumb began to prickle. Right at the base of a rock outcropping, known today as the Iron Doors of Newtown Ridge, Israel's thumb began to sting; and so, everyone stopped. "Here," he said, "is your new

n." They named it Newtown, and immediately settled down to
ld homes, dig wells, and they found much gold there.
But, the young actors became children once more, for they
e home. As Mr. Lem walked off toward School House Flat, he
ved to the children, and they waved to him. The day was over
I too soon and everyone was looking forward to another day in
e open with their teacher.

HOW ABOUT THAT! 7, 8, 9, 10.



THE MORMON WAGON TRAIL

One day, during the 1880's, busy whisperings of arithmetic tables and spelling being memorized by rote quieted in the Newtown School house when Mr. Lem shook his little hand bell. He smiled to the students that there was time for a question before lunch. After a few exchanged glances between the boys and the girls, one stood hesitantly and asked, "What happened after Henry Bigler discovered gold in our neighborhood? Did the Mormons come to Pleasant Valley as he'd expected?" (See: How About That! #4).

Mr. Lem told the class that the veterans of the U. S. Army's Mormon Battalion had wanted to go to their families at the Great Salt Lake right after the Mexican War in 1847 when they were honorably discharged; but, shortages of food and clothing there caused Brigham Young, the President of the Mormon Church, to ask them to wait. So, after working for a year at Sutter's Fort (Sacramento), or building Sutter's saw mill in Coloma, they bought wagons, livestock, tools, two small brass cannons (which Sutter had acquired from the Russians when he bought Fort Ross and its lands), clothing, and food needed for their trip to Salt

lake and to help their suffering families there.

By July 2, 1848, the Mormons had assembled at Pleasant Valley. Henry Bigler had been panning gold in the south fork of the creek the Indians called PUL-PUL-MULL' (Weber Creek) while he waited for them; and the week before, Captain Daniel Browett had gone ahead with two others to scout the best route to Carson Pass. Amongst those who'd arrived at Pleasant Valley was Melissa Coray, wife of Sgt. William Coray, who'd marched with her husband all the way from Fort Leavenworth, Kansas, to the Mexican war in California. The Mormons were well equipped and carried heavy pokes of gold nuggets.

Early in the morning of July 3rd, filled with excitement, the Mormons with their wagons left Pleasant Valley for Salt Lake, a place they'd only heard of, not realizing the tragedy awaiting them as they made the very first wagon road ever cut specifically to leave northern California.

Leaving Pleasant Valley for the Utah Territory, a full year ahead of the Gold Rush, over uncharted mountains, they cut the road as they explored their way, a road that would be used for eighteen years by thousands of gold and land seekers, and by countless freight wagons going both ways. The advantage of the Mormon wagon trail was its few and easy river crossings.

Using today's roads to describe, approximately, one of the three possible routes taken by the Mormons, each argued by historians: They left Mt. Aukum Road following Sly Park Road to Clear Creek. After crossing Clear Creek, the first ravine to the left (Dry Gulch) was climbed, up Wagon Trail passing Deadman Spring to its intersection with Sly Park Road. Then along Sly Park Road and out the length of Homestead Road to a trace of a road which climbs gently up the southeast slope of Mormon Ridge until it joins Sly Park Road about 1/4 mile below Sierra Springs Drive. Continuing along Sly Park Road through Post Flat, they camped on the West Fork of Sly Park Creek that night and for the next ten days.

The livestock and drovers lagged a day in Pleasant Valley while Henry Bigler and others rounded up strays. But, as the stock began to climb out of Pleasant Valley on the 4th of July, Henry heard the Independence Day bang of their Russian cannon all the way from Sly Park. The stock was driven past the camp and turned out to graze in Sly Park Meadow (now inundated by Lake Jenkinson), named for the Mormon scout, James Calvin Sly, who found it.

The Mormons, concerned for the advance party of three strong dependable scouts who'd not returned as agreed, sent a party of ten men from Sly Park to find them. Those remaining in camp built two corrals and feared for the lives of their missing friends.

Mr. Lem's story, of the first wagon trail to be cut eastward out of California, continued into the children's lunch time; but, they wanted to know what happened to the missing Mormon scouts. Mr. Lem told them that the ten men, sent out of Sly Park on July 5, 1848, searched for the three scouts (Capt. Daniel Browett, Henderson Cox, and Ezra Allen) and for Kit Carson Pass over the Sierra Nevada crest until nine days later (July 14th) when they returned, having found the Pass, but without finding the scouts.

The very next morning, Henry Bigler and three others went ahead with axes, cutting brush and rolling rocks out of the path for eight miles, somewhat paralleling today's remnants of the old Stonebreaker Grade, to the top of Diamond Ridge while the wagons and stock struggled behind. The party camped that night on the ridge; but, it was a mile or so to water. So, on the 16th of July, the axe men cut brush and rolled rocks along the south slope of the ridge, sweltering, until they traveled along a creek where they spent the night (possibly a mile or so east of Capps Crossing); and, they named the creek Camp Creek. The road had been bad, wagons needed repair, but they had water. (Today's Mormon Emigrant Road, or Iron Mountain Road, follows the top of Diamond Ridge).

On July 17th, brush was cut straight up a spur of the ridge to the top (Darlington Flat), and more or less followed along today's Mormon Emigrant Trail to a valley with water and grass, having cleared ten miles that day. Because of the quantity of wild onions there, they named it Leek Springs Valley. The road was bad and one wagon had broken an axle.

While most of the party remained at Leek Springs the next day, repairing wagons and running down stray livestock, Henry Bigler and four others cleared another ten miles of road (along today's Hwy 88), always watchful for their missing scouts. As they were returning to Leek Springs that evening, they saw an Indian pass by who was wearing the vest of one of the missing scouts. Then, they found a bubbling spring and evidence of a recent campfire. Nearby was a newly made mound of dirt. On July 19th, when the entire wagon party arrived at the bubbling spring, broken arrows and bloodstained rocks were found along with other signs of a terrible fight. Near a big fir tree lay Ezra Allen's gold poke still full!

Mr. Lem explained that the road from Leek Springs to the bubbling spring was a very hard pull and very rocky, causing another broken axle. So the party prepared to camp near the spring and the fresh mound of dirt that night. Because of an abandoned Indian dwelling nearby, it was assumed that the broken arrows and blood splattered rocks were signs of a fight between Indians and that the mound was an Indian grave. But, when Ezra Allen's gold poke was found by the fir tree and still full of gold, the mound was opened without question. What the Mormons saw shocked all of them; for, there in one shallow grave lay the mutilated bodies of the three scouts, Capt. Daniel Browett, Henderson Cox, and Ezra Allen, murdered and robbed of their clothing. The grave was covered again, the mound covered with stones, and services for their dead friends were held. The bubbling spring was named "Tragedy Springs" in remembrance (now an El Dorado Nat'l Forest Historical Picnic Site along Hwy 88).

During the night, something (a grizzly bear or Indians) stampeded the horses and cattle, "... the thundering of their running fairly shook the ground like an earthquake." To drive off whatever had frightened the stock, the Russian cannon was fired; and, all was quiet the rest of the night.

The 20th of July was busy with wagon repairs and rounding up the runaway stock; but, time was taken to cover the grave mound with a three foot wall of granite to keep out wild animals;

id, a memorial to the three scouts was carved into the heartwood
a blazed tree trunk. (One may see the carving at the Marshall
ld Discovery State Park Museum at Coloma).

July 21, 1848 saw the Mormon wagon train leave Tragedy
springs, the men struggling to clear the path over the Sierra
evada crest and Kit Carson Pass, forming the first wagon trail
ver made to leave northern California for the territories toward
the east.

The Mormons spread the word about their "easier route" as
they met emigrants going west.

The trip to the Great Salt Lake and to their families was
successful though constantly eventful and challenging; but, there
was no further loss of life. Ezra Allen's poke of gold was
delivered to his heirs.

Mr. Lem's hand bell tinkled in the silence of the story's
ending; and, the Newtown School's children burst out-of-doors to
eat their lunches and play "Mormon Battalion." They wondered with
each other why anyone would kill the scouts merely for their
clothing and not take the gold.



PLEASANT VALLEY INDIAN REMEDIES

An Indian Story of Disease and Medicine

Diseases were created long ago by animals in revenge for the abuses they suffered from man. When the plants, who have always been the friends of man, learned of the afflictions caused by the animals, they decided that they should counteract the evil designs. Each tree, shrub, and herb, down even to the grasses and mosses, agreed to furnish a remedy for one of the diseases with the promise, "I shall appear to help man when he calls upon me in his need." Thus did medicine originate, and every plant has a use if only we knew it.

In searching for the appropriate plant, the traditional Indian doctor passes by the first three plants. Then, after offering a preliminary prayer and humbly asking the plant spirit for permission, he takes the fourth plant. When he has dug the plant out of the ground, he places a clam shell disk in the hole and covers it as a token repayment to the plant spirit.

Long before the times of Leif Ericson and Columbus, the Indians of the Americas had developed cultures and societies, through their wisdom, in balance with nature. Religion was the center about which revolved their every thought and action. Their applied skills and crafts, included such abstractions as human relations, psychology, and politics, agriculture and irrigation, work animal training, weaving, astronomy, navigation, weather forecasting, the arts, oral and recorded history and literature, surgery and medicine, tool making, masonry, and road building, to mention a few.

The medicinal secrets of nearly every plant had been put to use by the Indians; and, their contribution of useful knowledge about medicine and drugs is taught in every medical school without credit to the Indians.

The local Maidu and Miwok Indians taught the gold seekers and the pioneering families the uses of many wild plants for medicines which controlled runaway heart beat and high blood

pressure, the soothing of headaches, allergies and sore throats, pain killers, sleep inducers, laxatives and costives, astringents, diuretics, and more, including controlled use of plants which enhanced visions both meaningful and sacred to the Indians.

The following Indian remedies, and many, many more, are to be found in books listed as references on pages #205-206. Remember, I am not a Doctor of Medicine and must not recommend any of the remedies.

WARNING

NEVER EAT OR DRINK ANYTHING MADE FROM WILD PLANTS YOU HAVE NOT POSITIVELY IDENTIFIED AS NON-TOXIC!

Without the wisdom of the Indians to guide you, you could make yourself very sick for awhile, or worse, you could die in agony.

The following are remedies which in my opinion are the most commonly known and harmless:

POISON OAK SKIN RASH: (Lotion applied to rash)

Indian soap root: slice a bulb and boil in one cup of water for one hour. Strain the lotion and freeze as cubes to preserve. Apply frozen lotion on irritated skin. (Note: save the fibers encasing the bulb for weaving or making a whisk broom).

Also may be used on the rash: the liquid from steeping heavily in simmering water, straining and cooling (freezing to preserve), manzanita leaves and/or berries; toyon leaves and/or berries; cascara sagrada (California coffeeberry) bark, leaves and/or berries; sticky grindelia flowers or buds.

LAXATIVE: (taken internally to ease constipation)

Tea made of cascara sagrada (sacred bark, California coffeeberry) bark only.

COSTIVE: (taken internally to ease diarrhea)

Tea made of mugwort leaves (wormwood).

COUGHS AND SORE THROAT: (taken internally)

Tea made of any of the following:

Wild rose hips and/or tender root shoots of the wild rose (high vitamin C source); pine needles (vitamin C); Yerba Santa (sainted herb) two or three fresh or dried leaves per pint of boiling water (a day's supply, to be sipped hot or cold a little at a time); toyon berries; manzanita berries; sticky grindelia flowers or buds; camomile.

The Yerba Santa leaf folded under the lip and mingled with the saliva, though bitter, leaves the mouth and the teeth feeling fresh and clean; and, some experience relief from pollen allergy and colds after a day or less.

PAIN or INFLAMMATION: (taken internally)

Tea made of willow leaves or willow bark (salicylic acid source, similar to aspirin). Tea made of Indian Pink.

SORES and ABRASIONS: (apply externally)
Pulp of hen-and-chicken succulent. Pulp of white yarrow plant.

STINGING NETTLE:

Rub stinging nettle rash with dock leaves for relief.

HEADACHE:

Crush bay leaves between hands and inhale fumes; drink willow bark tea made with the green bark of any willow.

MIGRAINE HEADACHE:

Camomile tea from flowering heads of the plant.

TOOTHACHE:

Crush pulpy parts of white yarrow with sore tooth and hold in place. Drink willow bark tea or willow leaf tea.

HAIR and BODY LICE, and TICKS: (apply externally)

After a thorough washing with soap and water, grease hair and body liberally, especially in areas of welts and rash. This suffocates the lice and ticks which are air breathers. Wash all clothing and bedding. Treat each itch or welt with grease immediately when one appears. (Indians used bear grease. Lanolin is best, Vaseline is too light but is helpful).

SHAMPOO:

Crush Indian soap root, apply as any soap with water, scrub and rinse. Hair will take a set upon drying.

DIRTY HANDS:

Indian soap root or ceanothi flowers rubbed by moist hands, then rinsed.

THE KILLING OF GENTLE BEAR

One evening, when friends were toasting themselves around the pot-belly stove in Enrico Brandini's Cantina in Newtown, sipping wine and tired of cards, the story teller, old Rocco, began weaving a spell about the murder of an innocent Indian girl named Gentle Bear. She'd been killed by an Italian, and the Italian community of Newtown had refused to defend him. It happened long before the Newtown fire of 1872, that the "bad egg" named Gigio came to town bragging he'd stolen money from his parents to pay his way to America, and that he'd steal again to repay them. One lonely miner, Simon, had lost his partner; so Gigio just moved into Simon's cabin, and ate Simon's food. Gigio quit mining when he couldn't scoop up the gold without using a pick and shovel, and spend hours bending over gold pans full of black sand from the long tom, water washing out the gold.

Twice, men in the camps collected enough gold to send Gigio to San Francisco to find work; but each time, he'd returned in under two weeks, penniless after a good time.

Rocco said it was summer of each year when the Indians from Nevada, expert horsemen, arrived with a drove of wild horses to break and sell locally. They called themselves Pinion Indians and were lead by Chief Hila. Their men and women were straight, tall, and handsome; and the women were athletic, equal to their men in horsemanship. The Pinions spoke English, paid their bills, asked no favors; and John Ringer (the unofficial Justice of the Peace at Smith Flat) had reason to wish the white men were as honest and law abiding.

A kindly person, Chief Hila's sister, Sarah, was well known for her skill with herbs and Indian healing methods by which she'd restored health to the half dead members of the Donner Party (after their rescue) at Johnson's Ranch on Bear Creek and at Sutter's Fort in Sacramento, during 1847, where she continued to treat them.

While the Pinions were in the Newtown area, they built cedar bark dwellings at Graystone (thought to be a few



hundred yards or so upstream from Rugg Gulch and the old Hesque log barn, in Teepee Ravine below Starks Grade Road) where they staked out corrals for their horses, and the women wove baskets to sell.

Some of the people of Newtown liked to spend Sunday afternoons at Graystone, watching the Pinions lasso and break their horses in the box-like canyon; and the Pinions enjoyed demonstrating their skills. Troublesome Gigio, always carrying Simon's revolver, swaggering, and looking for amusement, went there, too. He was warned to keep away from the handsome Pinion women who might as readily break a man as a horse!

Then, one torrid September afternoon, a Pinion couple named Fall Leaf and Gentle Bear came riding their horses to the stone store (now called Gardella's stone store) in Newtown. As was the Pinion custom, Gentle Bear waited on her horse in the heat, holding the reins of her companion's horse, while Fall Leaf purchased the camp supplies of sugar and flour.

Gigio's habit was to sit with the men in the late afternoon shade on the front porch of the stone store; and he tried to get Gentle Bear's attention with gestures. When this failed, he got up, stepped off the porch and walked toward her speaking what English he knew; but, she motioned him away. Before anyone could stop him, he stepped close to her horse; and as he grabbed for the reins, she lashed her quirt across his face. In less than a heart beat, Gigio drew old Simon's hand gun and fired two shots! Gentle Bear fell from her horse, dying!

At the sounds of the shots, Fall Leaf burst from the store, gathered into his arms Gentle Bear's bleeding body, and rode at full gallop toward Graystone.

Though the late afternoon was hot, a trembling chill fell upon the people of Newtown as Stephen (who ran the store) jumped the first saddled horse and streaked for Smith Flat to get deputy Justice of Peace John Ringer. Meanwhile, men ran from house to house warning the women and children to stay inside.

Gigio was crawling on the ground, groveling, and whimpering, "Get your guns! Those savages will come back to shoot me. You've got to protect me!" The other Italian men paid little attention to Gigio except to make sure he didn't get away.

Distances about equal, Stephen returned with John Ringer just as Chief Hila's eight sons arrived in Newtown at sundown. One angry Pinion could be a frightening sight; but here, casting long shadows, were eight Pinions sitting very upright on tall horses, their mouths pressed tightly, their eyes glowering! Anything could happen! The Pinions were perfectly capable of setting fire to brittle dry Newtown, shooting everyone in sight, maybe torturing the women! Aside from Gigio's revolver, only a few hunting rifles were available for defense. Not a lamp was lit anywhere in town; and, despite the heat, everyone knew that fearful chill in the air!

John Ringer and Chief Hila's elder son dismounted stiffly from their horses and exchanged guarded greetings. For an hour, they tried to reach some settlement; and the full moon arose. While the Newtown men followed the talks carefully, Gigio was worming his way into the shadows and toward the edge of the woods.

Though Gigio managed to slip away, unnoticed by the townsfolk, one pair of eyes (possibly those of Fall Leaf or maybe old Simon) watched Gigio's every move. Shortly, from a nearby gulch, a rifle shot shattered the troubled night; Gigio's absence was discovered, then his body.

That shot could have signaled the Italian men to fire upon the Indians had they any certainty that it was from a Pinion weapon, or if Gigio's life had meant much to anyone. But, the talks between Chief Hila's son and John Ringer continued into the moonlit night. Finally, the two men shook hands solemnly and the Pinions rode quietly into the shadows, back toward Graystone.

John Ringer said it was a temporary truce. Everyone was tense for a week, almost afraid to take a deep breath. Then, John Ringer went alone to Graystone and made a peace that no one felt sure of until the Pinions broke camp and returned to Nevada.

Old Rocco, who'd witnessed the event, held always that the people of Newtown escaped with their lives because Chief Hila's sons were men of honor, and because John Ringer was a persuasive man of justice.

The wonderful Pinion horsemen and their fine strong women never again returned to Graystone. It was a grave loss; for their horses were well broken, the baskets were useful works of art which stood much wear, and the prices were fair. The exciting Sunday afternoons each summer at Graystone, watching the skilled Pinions' horsemanship and basket weaving, were a thing of the past.

NOTE: The names Gentle Bear and Fall Leaf were given to the story as it was being rewritten by this author. The actual names are unknown.



THE INDIAN RETALIATION RAID THROUGH PLEASANT VALLEY

A band of Indians on horseback came rampaging down through Pleasant Valley late in the summer of 1850. They were Southern Maidu on a second retaliation party for the senseless killing of six of their tribe earlier at the ranch of Colonel John Calhoun (Cockeye Jack) Johnson. Cockeye Jack was an explorer, rancher, store keeper, lawyer, land developer, the original trans-Sierra mail carrier, and earliest promoter of Johnson's Cutoff over Echo Summit which would become the Lincoln Highway, and now Highway 50. His ranch had been the Maidu people's community, SA-SKI-AN', and in time it would become today's town of Camino (a Spanish name meaning "highway").

The rampaging Maidus, in what was called the second "Indian War" of El Dorado County, skirted the town of Pleasant Valley and annoyed lonely homesteaders as they rode across Spring Valley, down Mill Valley and through Hanks Exchange. They shot at one miner in his cabin on a gulch near Martinez Creek as they swept past Ringgold and on beyond Diamond Springs to Mud Springs (now the town of El Dorado, a Spanish name meaning "the golden one").

At Mud Springs, they turned about, raiding along the return path and driving ahead of them all the loose livestock they could. Probably, they swung north at today's Avansino Corner (Newtown Road at Pleasant Valley Road), crossed the Weber Creek forks and headed east toward the high mountains.

The raiding party and the stock forded the South Fork of the American River near the old Brockless Bridge (22 miles out of Placerville, just below today's Riverton on Hwy 50). One or two miners had been killed along the way, and the party arrived safely at their highland hideaway (possibly Silver Creek, north of Peavine Ridge).

Going back to the origin of the trouble, permanent Maidu communities long had existed the length of today's Fruit Ridge, a place rich in orchard soil, flowing springs, game and

timberlands. The Maidu villages, and the Maidu's group-rights to the use of their lands, interfered with European/American ideas of private property, fencing, and land development. Rumors flew at the time that the six Maidu were murdered to stir up the tribesmen into acts of revenge, possibly resulting in a permanent local militia post financed by State money to control the Maidu; or better yet, a reservation to dispose of the local Indians entirely would encourage the growth of a European/American population. Either choice would be profitable.

Well, as expected, the Maidu did avenge their murdered tribesmen, in the first "Indian War" of El Dorado County, by killing a few white men in a fight at the Middle Fork of the Cosumnes River over gold mining rights (Indian Diggings). Some of the white miners escaped to Johnson's Ranch. So, a three company militia (a little army of about 200 men) was organized under Sheriff William Rogers to punish the Maidu for killing the miners; and very happily for Cockeye Jack's prosperity, the militia encamped near Johnson's store. But, when no troublesome Indians put up a battle for a long time, the militia decided they should do something; so they marched southward in search of prey. Their path very likely passed from Camino toward Iowaville and Dog Town (approximating today's Snows Road), then Pleasant Valley to Wisconsin Bar (approximating Mt. Aukum road), crossed the North Fork of the Cosumnes River, past Somerset, crossed the Middle Fork of the Cosumnes River at Baker's Ford (today's Two Bridges swimming hole), on past Mt. Aukum to Bridgeport, crossed the South Fork of the Cosumnes River (now River Pines) to Shenandoah Valley, Fiddletown and the old southern border of El Dorado County. Amador County had not yet been formed, taking with it the portion of El Dorado County south of the South Fork of the Cosumnes River. Except for officially reporting one Indian killed in an action which appeared unrelated to the purpose of the militia, the march was uneventful. It was when this first militia was disbanded that the Maidu rampaged through Pleasant Valley to Mud Springs and back as the second "Indian War" of El Dorado County.

Certainly now, the Maidus must be punished, especially after this rampage which included the theft of livestock! So, a second militia was formed by Sheriff Rogers; and it filled quickly with young men bored with the monotony of mining. Memories of grand times and pleasant camping on the previous campaign still were fresh. Once more, Cockeye Jack's store benefitted from the full business of another encampment of the militia. Some Indian searching was done from that base camp; and, a report was made of a skirmish in which the Maidu losses were heavy. But, the militia scout, Bob Carson, discounted the report as a hoax.

Finally, an old trapper and Indian scout, "Peglegged" Smith, who was very familiar with the Maidu language (Nisenan dialect) and their habits, was hired by the militia. He found the Maidu people and made peace.

Well, the "Indian Wars" of El Dorado County were over, the local economy had been boosted by \$45,000 (possible equivalent in 1982, \$1,800,000), the normally peaceful and docile Maidu had received a bad reputation and were one step closer to confinement under the Indian Agency already proven to be mismanaged for

profit; and the land was falling into the hands of speculators and developers for little more than merely filing a claim. Obviously, the system (whether intentional or accidental) was working to the benefit of the European/American, and to the exclusion of the Maidu people.

FEARLESS PARENT™

Thinking ... For a Change

Home Avoiding Toxins Cell Tower Hypocrisy: Rescuing Firefighters Not Kids

Cell Tower Hypocrisy: Rescuing Firefighters Not Kids



Cell Tower
Hypocrisy:
Rescuing
Firefighters
Not Kids

Fearless Parent

by Susan Foster

*Editor's note: California is **once again** in a trendsetting legislative battle with dramatic implications for our collective public health. Big Telecom wants fewer impediments to deliver next generation connectivity: more, faster, e-ver-y-where. It's time to say: NO. The technology we love is harming us and, most of all, our precious children who **absorb ten times more radiation than adults**, with their thinner skulls and higher water- and ion-content brains. Please share this post widely.*

Dear Gov. Jerry Brown,

I have a story to share with you. It involves inside information from the telecommunications industry; firefighters and what their brains look like following a five-year exposure to a cell tower outside their station; and a bill currently flying through the California Senate and Assembly.

SB 649 is going to land on your desk sometime in early September.

Veto this bill

As you know, many of us don't like SB 649. More than half the cities in California comprising more than 2/3 of California's citizens don't want this bill to become law.

SB 649 would essentially deregulate the telecommunications industry by giving them the right to force cities and counties to lease available lampposts, buildings, and the right-of-way for cell towers and transmitting antenna which will blanket our neighborhoods and our cities with 5G millimeter waves. 5G, or 5th generation wireless, is virtually untested on human beings. Electrical equipment the size of refrigerators will be allowed, along with back-up generators filled with diesel fuel.

Our exposure to radiation from towers has increased exponentially. With SB 649, California is about to add 50,000 more "small cells" to approximately 300,000 cell towers currently in existence nationwide.

The digital divide will remain a chasm

One of the selling points in legislatures across the country is that 5G will help close the [digital divide](#). That sounds great.

The truth, however, is communications providers have repeatedly demonstrated that they will not make advanced services available to low-income or rural areas unless they are required to do so. SB 649 contains no such requirement.

Driverless cars over children

Most of all, we're worried about the most vulnerable among us – our children. In the name of faster downloads, appliances that communicate with smartphones in the [Internet of Things \(IoT\)](#), and driverless cars, what good is all this progress if you are putting our children with their developing brains and rapidly dividing cells at risk?

We don't want to sacrifice our children's health just so we can preheat the oven with the touch of our phones allowing us to pop a chicken in to roast the minute we walk in the door after a quick trip to the store in a car that just drove itself.

Wireless radiation and DDT have in common

SB 649 would increase harmful radiation that the World Health Organization's cancer committee IARC classified a 2b "possible human" carcinogen in May 2011.

This verdict put everything on the RF – EMF spectrum into the same category as DDT, which has been banned in the U.S. since 1972. The vote on wireless radiation wasn't even close. It was 29 to 1.

The only thing that kept this radiation from being classified as a 2a "probable human" carcinogen was a lack of unbiased animal studies.

Reasons why the NTP study is such a big deal

Well, Gov. Brown, now we have one. And for a country with a paucity of government research on RF radiation since Ronald Reagan defunded the EPA's research around the same time the cell phone industry was taking in the early 1980s, the U.S. really came through big time with a rat study from NIH's National Toxicology Program (NTP).

The \$25 million NTP study found brain cancer and heart cancer when rats were exposed to full body cell phone radiation, not unlike the 24/7 exposure our children will be receiving if you sign SB 649 into law.

DNA damage from wireless radiation

And speaking of children, we have a profound desire not only for them to be healthy, but for their children to be healthy, as well. According to Microwave News, there was evidence of DNA damage coming out of the NTP study.

Please keep that, and the protection of our children in mind, when SB 649 hits your desk.

The firefighter exemption tells the tale

In a move that strikes me as a lesson for all of us to absorb, one group of Californians is already protected from SB 649. One's mind leaps immediately to the unborn, to children, to the elderly, to those who are infirm or disabled.

It is none of these groups.

The legislature has granted an exemption after a 17 year fight for recognition that cell towers were causing them harm, and that group is among the strongest, healthiest among us – the firefighters.

Why? Because they deserve it.

How do I know? Here's where the story I promised you comes in.

Telecom insider emerges from the shadows

Almost 20 years ago, I was walking our family dog after watching the school bus disappear from sight. From behind a small cluster of palm trees a woman stepped out of the shadows. She asked if we could speak, but insisted on doing so out of sight of passersby. She confirmed who I was, and asked if she had her information correct that I was a medical writer. I said I was, and suddenly the vaguely familiar face had more meaning.

She was the young wife of a telecom executive who lived several streets over. Our children went to the same school. I was then asked by the stranger if I could lead the neighborhood fight against a proposed cell tower being permitted for the golf course surrounding our neighborhood.

I responded with a question that seems almost inconceivable today. "What's a cell tower?" I was clueless. I'm embarrassed to say I didn't even question how voice data traveled from one cell phone to another.

The executive's wife told me she would point out a few faux metal palm trees to me, yet cautioned once I started recognizing these tall metal conduits for radiation from one point to another, I would never stop seeing them. Data was carried on the back of microwaves, she explained, and they could penetrate every living thing – plant, animal, and human.

I asked if she had any science to support this. "Yes," was her one syllable response. How do I get my hands on the studies, I wanted to know. She reassured me it would be taken care of, and then asked me to tell no one we had talked. Her husband's job was at risk.

As I was about to continue on a walk that was already in the process of changing my life, I turned back and asked an uncommonly bold question for me, "Am I correct that you were diagnosed with cancer several years ago?" Yes, she had been. My next question was answered even before I asked.

"It's the children I'm most worried about"

"Some of my husband's colleagues have had brain cancer. It feels beyond coincidence. They all know at some level it's dangerous, but they're making so much money." She paused, "It's the children I'm most worried about." I nodded in agreement about the children. More information was shared before I followed my dog out of the shadows. I struggled to assimilate what I had just heard. The industry knew this stuff caused cancer and they were still permitting cell towers for neighborhoods?

A numbness overcame me the rest of my walk through the neighborhood. The telecom executive's wife had left me with a daunting challenge. I had to lead a neighborhood fight against a cell tower, yet we had to kill this permit without bringing up health before a city or county council.

Bureaucratic capture of the FCC ties our hands

The Telecom Act of 1996 forbade localities from opposing cell towers on health grounds, only aesthetics. In America?

Seriously? Yes, seriously.

It's called the preemption clause. As long as the FCC says it's okay – and that means under 1000 uW/cm² of radiation for a cell tower – it is presumed safe. Yet the FCC wasn't a health agency and they didn't do their own studies. It seems there was a **revolving door** between the FCC and the CTIA – The Wireless Lobby, leaving me with no reassurance of safety at all.

I was swimming in a sea of new information that I wished I didn't know, yet the parent in me longed to know more. My wish was about to come true.

Secret agent in the night, with the science

For the next six weeks, perhaps two mornings a week, I would open the front door to let our dog outside before waking the children. There, placed squarely on the doormat, would be an unmarked manila envelope with two or three scientific studies inside.

This was my first glimpse into what the telecom industry knew in 2001, and has failed to this day to share with the public. A **1994 study by Henry Lai and N.P. Singh** of the University of Washington struck me as the most worrisome.

RF radiation could damage DNA in the brain cells of rats.

We beat back the neighborhood cell tower

After an intense six week campaign, we prevailed with the help of a former union official who coached us in planning a march along a boulevard leading to the golf club at the back of the neighborhood. It was strategically timed for the weekend of the former San Diego Chargers' quarterback Stan Humphrey's celebrity golf tournament.

We created bad PR for the golf club willing to lease land to telecom, and bad PR for the wireless carrier.

The permit was pulled the day before our march.

Firefighters wanted help, too

Following our success, we were interviewed on TV. A few weeks later, I received a telephone call from a firefighter who had seen me speaking for the neighborhood group. He said their fire station in San Diego was getting hit with 24 antennae on the roof of the station. They were out of money and out of time.

Could I write an appeal?

I said I would try, but explained we couldn't do so based on health concerns. The firefighters were stunned. These guys risk their lives for us every day of the week and they did not have a right to say they didn't want 24 antennae on the roof of their fire station because the radiation was a health risk?

How could this be?

Telecom Act of 1996 preempts our rights

Check out [Section 332\(c\)\(7\)\(B\)\(iv\) of The Telecommunications Act of 1996](#). It preempts zoning authority from local governments. Aside from aesthetics, a city has no voice.

I wrote the firefighters' appeal using a safety angle. It bought us time. One cell carrier went elsewhere.

We then worked to educate the fire chief about the dangers of wireless radiation. Fire chiefs often rent out space on the stations. By bringing in more revenue for the city, a chief's job is more secure. But the rank and file pay the price.

It comes down to the age old issue of money.

Canaries in the coal mine... with red fire hats

I began hearing more stories of firefighters who literally could not function in their jobs, as guardians of society. Once cell towers were activated on or adjacent to their stations, many – depending on the location of the tower and the direction the beam of radiation was following — developed severe headaches, insomnia, and foggy thinking.

These are not symptoms we wish to see in our First Responders.

Exposing the truth is what parents do

And so, as parents who care passionately about our children's futures know to do, I decided to take matters into my own hands. If my own government didn't care enough to fund studies into the hazards of RF radiation, and if the telecom industry was allowed to get away with [threatening universities and funding](#) where good science was taking place, we had to find other ways of exposing the truth.

In 2004, I organized a [SPECT brain scan pilot study of firefighters](#) who had been exposed to a cell tower on their station for over five years. We found brain abnormalities in all firefighters tested.

Res. 15 banned cell towers on fire stations

In 2004, I co-authored [Resolution 15](#), which was passed overwhelmingly by the International Association of Firefighters. Res. 15 urging a moratorium on the placement of cell towers on fire stations

in the US and Canada based not only on the SPECT scan study of California firefighters, but on **existing science**.

I then helped the Los Angeles **IAFF** locals as they aligned with law enforcement unions to **fight FirstNET towers** on their stations.

There is a solid history of firefighters becoming ill in close proximity to cell towers. There are human and financial costs associated and the state needs to hear their story, Gov. Brown.

The whole country needs to hear their story.

Supermen's kryptonite: brain damage, infertility

The symptoms experienced by the firefighters who participated in the SPECT brain scan study were similar to firefighters in other stations who live in the shadow of cell towers.

It is important to note that all the men we studied had passed rigorous physical and cognitive exams prior to being hired by the fire department. In California you have to score in the top 98th or 99th percentile to even be hired by the fire service. These were extremely bright, healthy men. For testing purposes we excluded men who had worked HazMat, as we did not want chemical exposure clouding the picture.

The firefighters' symptoms after a five-year exposure to a cell tower adjacent to their station included:

- headaches
- extreme fatigue
- cognitive impairment
- anesthesia-like sleep where the men woke up for 911 calls "as if they were drugged"
- inability to sleep
- depression
- anxiety
- unexplained anger
- infertility
- immune-suppression manifest in frequent colds and flu-like symptoms

Shocking stories of cognitive and other damage

Here is how these symptoms translated to real-life responses when we, as a society, need our firefighters the most:

- On several occasions firefighters got lost on 911 calls in the town they grew up in. They used to ride their bikes down these streets. Yet they got lost driving a fire engine.

- In another instance, the emergency bell sounded, and four firefighters awakened from what can only be described as a severe stupor. They got dressed in their protective gear as quickly as they could, slid down the pole, climbed in the truck – two in front and two in back – and just sat in the rig with the alarm sounding in the background. Finally the captain turned to the engineer who was holding the keys in his hand and said, “Hey, aren’t we supposed to be doing something?”
- A medic with 20 years of experience who had never made a mistake and prided himself on that fact forgot basic CPR in the midst of resuscitating a coronary victim. Because the men knew they were struggling to function in the face of the classic radiation poisoning, they looked out for each other. The captain had been counting chest compressions and took over, but it was a potential risk to the victim and a shattering personal experience for the medic.
- This is a relatively small fire department, but most of the men were at an age where they were starting families or adding to them. Yet for three years there were no live births among their wives. There appeared to be an inability to conceive, and there were several miscarriages. Three years after the tower was installed, a healthy son was born to one firefighter and his wife. At age two he was diagnosed with autism.

The brain scans of these six men revealed a pervasive, hyper-excitability of the neurons, which suggested the exposure to RF (microwave) radiation was causing the neurons to continually fire without benefit of rest. When neurons (brain cells) cannot rest, they ultimately die.

Yet more immediately, we found cognitive impairment, delayed reaction time, and lack of impulse control in all six men tested.

Holy smokes!

Gov. Brown, if we found this degree of damage in big, strong, previously healthy firefighters, just imagine what SPECT brain scans might reveal in children with thinner skulls, developing brains, and rapidly dividing cells.

FCC guidelines permit even more radiation

The fire station cell tower measured at 1 to 2/1000th of the allowable FCC limit of non-ionizing radiation. That means the towers could be almost 1000 times more powerful than the level the firefighters were exposed to, and still be considered within FCC guidelines. And yet even at these “low” levels of radiation, we found brain abnormalities and measureable neurological deficits.

If your children or other family members become ill as a result of a 5G transmitting antenna on a lamppost outside your child’s bedroom window, the carrier is protected from a lawsuit.

Even more terrifying?

The cell tower that radiated the firefighters was 2G, or 2nd generation technology. With SB 649 we're talking 5G with its untested millimeter wave used in airport body scanners and the military.

Lesson learned from six brave men

The firefighters' most important lesson to us as a state, and as a society, may be that if we allow the buildout of cell towers so they become commonplace in front of homes and schools, just as they are now on fire stations, we will be facing not just a growing risk of cancer for ourselves and our children, but a neurological tsunami of illnesses from ADHD to autism to Alzheimer's.

Do I have statistics to back up the theory that the firefighters whose stations have long been targeted for cell tower placement are harbingers of what is happening to society?

Yes, I do.

Rising ADHD, autism, Alzheimer's, anxiety

More than **one in ten children received an ADHD diagnosis** in 2011 according to the CDC, and that represents a 42 percent rise from a decade earlier. Most of the costs were incurred by adults due to productivity and income losses and they're staggering. CHADD, the **National Resource on ADHD, evaluated the costs** based on a review of 19 research studies and found for children and adults a range between \$143 billion to \$266 billion (adjusted to 2010 U.S. dollars).

The Autism Society puts the **prevalence of autism in U.S. children** as having increased by 119.4 percent from 2000 (1 in 150) to 2010 (1 in 68), extrapolating from CDC stats. **Autism services cost U.S. citizens** \$236 – \$262 billion annually.

The rate of **people dying from Alzheimer's disease in the United States** rose by 55% over a 15-year period according to new data from the Centers for Disease Control (May 2017).

According to the Alzheimer's Organization, Alzheimer's is the most expensive disease in America, costing more than cancer and heart disease. In 2017, the **direct costs to American society of caring for those with Alzheimer's** and other dementias will total an estimated \$259 billion. The Alzheimer's costs to Medicare and Medicaid alone, for the same year, are staggering; together they will spend an estimated \$175 billion caring for those with Alzheimer's and other dementias – 68 percent of total costs.

If that didn't make you anxious enough...

The National Institute of Mental Health reported 25% of kids between ages 13 and 18 will experience an anxiety disorder. This is a **20-fold increase fold** over the last 30 years.

ADHD, autism, Alzheimer's, anxiety. And this is just the A's.

Radioactive isotopes and technicolor brains

Six firefighters had radioactive isotopes injected into their bloodstreams that lit their brains up in diagnostically-meaningful colors. Gov. Brown, you might ask what this has to do with these statistics and numbers? I suggest they may have a lot to do with explaining how the incidence rates of these neurological diseases and disorders got so inexplicably high.

These bold, fearless firefighters may not be your typical canaries in the coal mine, but we brought the coal mine to these grand men and women of the fire service. Many of them are ill, and we need to see them as possible harbingers of what is to come to the rest of us.

Explosion of wireless a causal factor?

Independent research has shown a host of adverse neurological and immunological effects from cell towers.

Is there a correlation of increases in ADHD, autism and Alzheimer's with an increase in the number of cell towers? The increase in mobile phone subscribers gives a better sense of the trend. There were just over 44,000,000 wireless subscriber connections in 1996. By 2016, 20 years later, there were 395,881,497 subscriber connections according to the CTIA.

Our exposure to radiation from towers has increased exponentially. With SB 649, California is about to add 50,000 more "small cells" to approximately 300,000 cell towers currently in existence nationwide.

An exemption for firefighters but not for kids?

The state clearly honors the sacrifice of California's firefighters and is concerned about the health risks they face from cell towers. After all, it granted them an exemption from SB 649.

Yet, firefighters are the strongest of the strong. What does that imply for the rest of us?

Gov. Brown, shouldn't we weigh the risk to our children of untested 5G before deployment of cell towers in front of homes, schools, parks, playgrounds such that our children are bathed in millimeter waves 24/7?

When did wireless become oxygen? There's nothing we cannot do wired that we're presently doing utilizing wireless technologies except talk on a cell phone. Let's consider the risk in that context.

Leading the world, not just California

Your voice was heard around the world in July when crowds cheered in Hamburg, Germany as you announced California would gather leaders from around the world for a global warming summit next year. The *New York Times* called you America's *de facto leader on climate change*.

You will have the power to march in lockstep with half the other states in this country attempting to fast track 5G infrastructure. Or you can tell California – and everyone listening – that we will pause, test, and protect first.

Veto the bill + a moratorium on 5G and IoT

We are asking you to be that leader now, and study the [5G millimeter wave](#) that has the ability to heat skin, eyes, and testes. 5G will be a ubiquitous presence in our lives and in our homes, 24/7, with no “off” switch, no reprieve, and it has never been studied on a human population. Consider all the phones, WiFi, tablets, and a disquieting number of cell towers already in existence.

We do not want a telecom usurpation of local control over our communities, and a blanket of radiation over our homes and our children.

Gov. Brown, put your pen down (please)

Before you sign, we beseech you to pause, bring in independent experts from all over the world, and make California a leader in children’s health over the Internet of Things. Study the effects. Do not let our children become guinea pigs any more than they already are. Please put your pen down, Gov. Brown.

You’ve got mail

I’m asking every concerned parent to mail, email, or fax this letter to you and just say NO to SB 649 and 5G everywhere:

Governor Jerry Brown
c/o State Capitol, Suite 1173
Sacramento, CA 95814

Fax: (916) 558-3160

[Email link](#) (or manually enter: <https://govapps.gov.ca.gov/gov39mail/>)

**Respectfully yours,
Susan Foster**

ps. For more information about radiation risks, check out some great FP posts [here](#) and [here](#).

Susan Foster is a medical writer who has worked with firefighters on health, safety and policy with respect to cell towers on their stations since 2000. She organized a brain study of California firefighters in 2004 and was the original author of Resolution 15 passed by the IAFF in 2004. She is an Honorary Firefighter with the San Diego Fire Department and a U.S. Adviser to the UK’s Radiation Research Trust.

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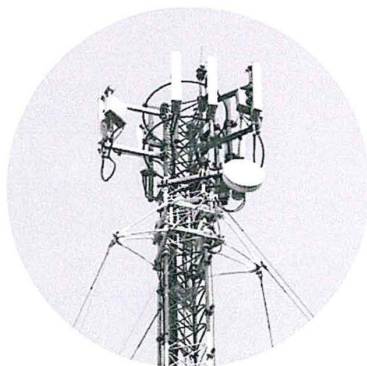
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Is Cell Tower Radiation Dangerous?



Cell Phone Tower Exposure Overview

You are exposed to 100 million times more electromagnetic radiation than your grandparents were, and part of the reason is radiation from cell phone towers and microwave antennas.

Human population centers are flooded with massive amounts of powerful wireless microwave radiation. Cell phone towers emit high-frequency radio waves, or microwaves, that can travel as far as 45 miles over level terrain. The closer you are, the greater the danger.

Know Your EMF Health Risks

- [Cell and Smart Phones](#)
- [Electrostress from Computers](#)
- [EMFs in the Home](#)
- [Electrostress and Travel](#)
- [Wi-Fi Router Dangers](#)
- [Power Lines](#)

Health Effects

The microwaves from cell phone towers can interfere with your body's own EMFs, causing a variety of potential health problems, including:

- Headaches
- Memory loss
- Cardiovascular stress
- Low sperm count
- Birth defects
- Cancer

Radiation from the Earth
EMFs from Underground Pipes
Smart Meters

Choose Products to Protect Yourself

SafeSpace Solutions

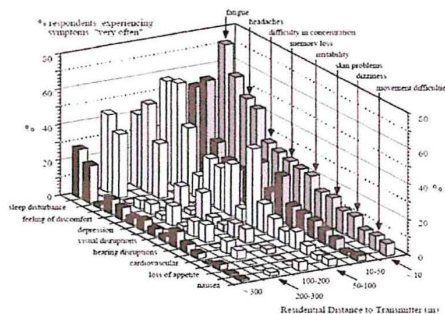


Figure 9. Response of residents living in the vicinity of a cellular phone base station in France.

A Closer Look at Cell Tower Exposure

Cell towers (or cell sites) that hold antennas and other communications equipment flood the area for miles around with powerful high frequency radio waves (known as microwaves) to support the use of cellphones as well as Wi-Fi, WiMax, Wireless LANs, 802.11 networks, Bluetooth supported devices and more.

Cell tower microwaves might travel for as few as two miles in hilly areas, and up to 45 miles where there are fewer obstructions; and of course, they easily penetrate brick and metal

Radio masts - Smaller versions of cell towers, often seen on rooftops and billboards, typically installed 800-1300 feet apart.

Mobile towers - Sometimes installed on the tops of buildings. Mobile towers are especially dangerous because they emit microwaves at a frequency of 1900 MHz. Recent studies have shown that the intense radioactivity from mobile phone towers adversely impacts every biological organism within one square kilometer.

Cellphone tower microwaves have a significantly higher frequency than even radio waves. The higher the frequency, the more powerful the wave—and the more powerful effect on biological organisms (recall that a mobile tower emit microwaves at 1900 MHz).

Protecting Yourself and Your Family

Cell phone towers and power lines are virtually everywhere. However, SafeSpace offers a range of effective, affordable products that can help you protect yourself and your loved ones against the dangers from hallmarks of the modern world. For more information, **click here**.



CELL FACTS

Industry representatives try to reassure communities that facilities are many orders of magnitude below what is allowed for exposure by standards-setting boards and studies bear that out (Cooper et al. 2006; Henderson and Bangay 2006; Bornkessel et al. 2007). These include standards by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) used throughout Europe, Canada, and elsewhere (ICNIRP 1998). The standards currently adopted by the U.S. FCC, which uses a two-tiered system of recommendations put out by the National Council on Radiation Protection (NCRP) for civilian exposures (referred to as uncontrolled environments), and the International Electricians and Electronics Engineers (IEEE) for professional exposures (referred to as controlled environments) (U.S. FCC 1997). The U.S. may eventually adopt standards closer to ICNIRP. The current U.S. standards are more protective than ICNIRP's in some frequency ranges so any harmonization toward the ICNIRP standards will make the U.S. limits more lenient. **All of the standards currently in place are based on RFRs ability to heat tissue, called thermal effects. A longstanding criticism, going back to the 1950s (Levitt 1995), is that such acute heating effects do not take potentially more subtle non-thermal effects into consideration.** And based on the number of citizens who have tried to stop cell towers from being installed in their neighborhoods, laypeople in many countries do not find adherence to existing standards valid in addressing health concerns. Therefore, infrastructure siting does not have the confidence of the public (Levitt 1998)

Specific absorption rate (SAR)

Absorption of RFR depends on many factors including the transmission frequency and the power density, one's distance from the radiating source, and one's orientation toward the radiation of the system. Other factors include the size, shape, mineral and water content of an organism. **Children absorb energy differently than adults because of differences in their anatomies and tissue composition. Children are not just "little adults". For this reason, and because their bodies are still developing, children may be more susceptible to damage from cell phone radiation.** For instance, radiation from a cell phone penetrates deeper into the head of children (Gandhi et al. 1996; Wiart et al. 2008) and certain tissues of a child's head, e.g., the bone marrow and the eye, absorb significantly more energy than those in an adult head (Christ et al. 2010). The same can be presumed for proximity to towers, even though exposure will be lower from towers under most circumstances than from cell phones. This is because of the distance from the source. The transmitter is placed directly against the head during cell phone use whereas proximity to a cell tower will be an ambient exposure at a distance.

The intensity of RFR decreases rapidly with the distance from the emitting source; therefore, exposure to RFR from transmission towers is often of low intensity depending on one's proximity. But intensity is not the only factor. **Living near a facility will involve long-duration exposures, sometimes for years, at many hours per day. People working at home or the infirm can experience low-level 24 h exposures. Nightrtmes alone will create 8 h continuous exposures. The current standards for both ICNIRP, IEEE and the NCRP (adopted by the U.S. FCC) are for whole-body exposures averaged over a short duration (minutes) and are based on results from short-term exposure studies, not for long-term, low-level**

exposures such as those experienced by people living or working near transmitting facilities. For such populations, these can be involuntary exposures, unlike cell phones where user choice is involved.

Biological effects at low intensities

Many biological effects have been documented at very low intensities comparable to what the population experiences within 200 to 500 ft (*60–150 m) of a cell tower, including effects that occurred in studies of cell cultures and animals after exposures to low-intensity RFR. Effects reported include: genetic, growth, and reproductive; increases in permeability of the blood–brain barrier; behavioral; molecular, cellular, and metabolic; and increases in cancer risk. Out of the 56 papers in the list, 37 provided the SAR of exposure. The average SAR of these studies at which biological effects occurred is 0.022 W/kg — a finding below the current standards. **Ten years ago, there were only about a dozen studies reporting such low-intensity effects; currently, there are more than 60. This body of work cannot be ignored. These are important findings with implications for anyone living or working near a transmitting facility.** However, again, most of the studies in the list are on short-term (minutes to hours) exposure to low-intensity RFR. Long-term exposure studies are sparse. In addition, we do not know if all of these reported effects occur in humans exposed to low-intensity RFR, or whether the reported effects are health hazards. Biological effects do not automatically mean adverse health effects, plus many biological effects are reversible. **However, it is clear that low-intensity RFR is not biologically inert. Clearly, more needs to be learned before a presumption of safety can continue to be made regarding placement of antenna arrays near the population, as is the case today.**

Long-term exposures and cumulative effects

There are many important gaps in the RFR research. The majority of the studies on RFR have been conducted with short-term exposures, i.e., a few minutes to several hours. Little is known about the effects of long-term exposure such as would be experienced by people living near telecommunications installations, especially with exposures spanning months or years. The important questions then are: What are the effects of long-term exposure? Does longterm exposure produce different effects from short-term exposure? Do effects accumulate over time?



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Tower and Antenna Siting

Building a new tower or collocating an antenna on an existing structure requires compliance with the Commission's rules for [environmental review](#) (<https://www.gpo.gov/fdsys/pkg/CFR-2000-title47-vol1/pdf/CFR-2000-title47-vol1-sec1-1307.pdf>). These rules ensure that licensees and registrants take appropriate measures to protect environmental and historic resources, and that the agency meets its obligations under the National Environmental Policy Act (NEPA) to consider the potential environmental impact of its actions, as well as under other environmental statutes such as the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA). A new tower construction requires:

- Approval from the state or local governing authority for the proposed site;
- Compliance with FCC rules implementing the [NEPA](#), which includes separate procedures for
 - [ESA](#); and,
 - [NHPA](#) (including [Section 106](#)).
- Depending on the tower's height and location, construction may also require:
 - [Federal Aviation Administration \(FAA\) notification](#); and,
 - [Antenna Structure Registration \(ASR\)](#) with the FCC.

In 2016, the Wireless Telecommunications Bureau held a [workshop](#) ([/news-events/events/2016/05/environmental-compliance-and-historic-preservation-workshop](https://www.fcc.gov/news-events/events/2016/05/environmental-compliance-and-historic-preservation-workshop)) which provides a general overview of the process.

Collocations, including Distributed Antenna Systems (DAS) and Small Cells, may also require compliance with these same processes. See the [Collocation Agreement](#) (<http://wireless.fcc.gov/releases/da010691a.pdf>) and [Factsheet](#) (http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-02-28A1.pdf) for more information about collocations that require compliance with NEPA, NHPA, FAA and ASR rules. The Commission's October 2014 [Infrastructure Report and Order](#) (https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-153A1.pdf) includes some NEPA and NHPA exclusions specific to DAS and Small Cell deployments.

State and Local Authorities

[Section 332\(c\)\(7\) of the Communications Act](#) (<https://www.law.cornell.edu/uscode/text/47/332>) preserves state and local authority over zoning and land use decisions for personal wireless service facilities, but sets forth specific limitations on that authority. Specifically, a state or local government may not unreasonably discriminate among providers of functionally equivalent services, may not regulate in a manner that prohibits or has the effect of prohibiting the provision of personal wireless services, must act on applications within a reasonable period of time, and must make any denial of an application in writing supported by substantial evidence in a written record. The statute also preempts local decisions premised directly or indirectly on the environmental effects of radio frequency (RF) emissions, assuming that the provider is in compliance with the Commission's RF rules.

Allegations that a state or local government has acted inconsistently with Section 332(c)(7) are to be resolved exclusively by the courts (with the exception of cases involving regulation based on the health effects of RF emissions, which can be resolved by the courts or the Commission). Thus, other than in RF emissions cases, the Commission's role in Section 332(c)(7) issues is primarily one of information and facilitation.

[Section 1455\(a\) of the Communications Act](#) (<https://www.law.cornell.edu/uscode/text/47/1455>), enacted as part of the Middle Class Tax Relief and Job Creation Act of 2012, establishes a further limitation on state and local land use authority over certain wireless facilities. Specifically, it provides that a state or local government may not deny and shall approve any eligible facility request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station, and defines eligible facility requests as including requests for the collocation, removal, or replacement of transmission equipment.

The Commission has adopted a rule, codified at [47 C.F.R. § 1.40001](#) (https://apps.fcc.gov/edocs_public/attachmatch/DA-15-598A1.pdf), to further clarify and implement these requirements.

FCC Items Related to Section 332(c)(7) and Section 1455(a) include:

- Report and Order, FCC 00-408, adopted November 13, 2000 (establishing procedures for requesting relief under Section 332(c)(7) from impermissible State and local regulation of wireless facilities based on the environmental effects of RF emissions.
- Declaratory Ruling, FCC 09-99, adopted November 18, 2009 (clarifying certain aspects of the limits on state and local authority under Section 332(c)(7)).
- Report and Order, FCC 14-153, adopted October 21, 2014 (adopting rule to clarify and implement requirements of Section 1455(a), and providing further clarification of Section 332(c)(7)).

The National Environmental Policy Act

<https://www.fcc.gov/general/tower-and-antenna-siting>

1/7

NEPA requires agencies to consider and disclose the environmental effects of its actions to improve decision-making and encourage transparency, public participation, and accountability. Effects are defined broadly to include ecological, aesthetic, historic, social, and cumulative and indirect effects.



NEPA has three levels of review, depending on the significance of the effect (which, in turn, depends on the context and intensity of the action; for example, a tall, guyed tower in an ecologically sensitive area is likely to have more significant effects than a short, guyed tower in an industrial area):

Categorical exclusions (CatExs)—for actions or types of actions which individually and cumulatively are deemed to have minimal or no impacts on the environment. The actions may therefore qualify as excluded from detailed environmental analysis.

Environmental Assessments (EAs)—for actions that may have a significant effect, an EA determines potentially significant impacts. If no significant impacts are found, the agency issues a Finding of No Significant Effect (FONSI).

Environmental Impact Statements (EISs)—for major federal actions with the potential to significantly affect the quality of the human environment. These actions require a detailed analysis of actions and alternatives and concludes with a Record of Decision (ROD).

NEPA does not mandate an outcome or prevent projects from moving forward; it only requires consideration of effects and of alternatives to mitigate the environmental effects of a project. To implement NEPA, each federal agency adopts its own procedures, and the Council on Environmental Quality oversees NEPA implementation.

FCC's NEPA Process

The FCC considers registering and licensing towers and facilities to be actions that trigger agency NEPA obligations. Consequently, [FCC rules](https://www.law.cornell.edu/cfr/text/47/part-1/subpart-l) (<https://www.law.cornell.edu/cfr/text/47/part-1/subpart-l>) impose enforceable duties on licensees and applicants in order to meet the agency's NEPA obligations.

All facilities constructed by or for FCC licensees must comply with agency environmental regulations implementing NEPA. The rules apply to all licensees and registrants: commercial licensees, utilities, public safety, railroads, and mining companies. Because licensees and registrants cannot locate on a facility that has not gone through a NEPA review, tower constructors that are neither licensees nor registrants must also follow these rules. These regulations ensure agency compliance with the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA) as well.

While the agency has delegated the initial assessment of CatExs (and certification to that effect if required) and preparation of EAs to licensees and applicants, compliance with NEPA rests with the FCC.

FCC environmental rules categorically exclude all actions from detailed environmental review except those associated with the construction of facilities that fall into certain categories. The categories of facilities requiring environmental assessments (EAs) include those facilities:



- Located in a wilderness area (most likely on federal land) or in a wildlife preserve (likely on federal land);
- That might affect threatened and endangered species or their habitat (ESA);
- That might affect properties included in or eligible for inclusion in the National Register of Historic Places (NRHP) or Indian religious and cultural sites;

- That will be in a floodplain;
- Whose construction will involve "significant changes in surface features" (e.g., in wetlands, water diversions, significant ground disturbance, deforestation);
- That might affect migratory birds if the towers are over 450 feet; or
- That involve high intensity lighting in a residential area or would cause RF radiation in excess of FCC-established limits.

If any element of a proposed project – including the tower, fence, trenching, roads, parking, power and fiber connections and their operation and maintenance – falls into any of these categories, the applicant must [file an EA \(/help/filing-environmental-assessment-antenna-structure-registration-asr-system\)](#) which discloses those effects and on which the public can comment.

Complying with FCC environmental regulations requires completing an analysis of the categories BEFORE certifying that there is no significant environmental effect. Analysis includes, for example, compliance with ESA and NHPA requirements.

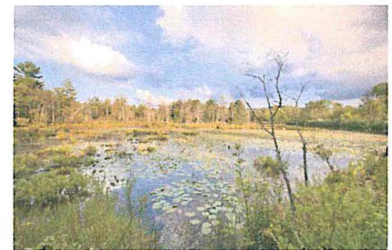
After an EA is filed, the document is put on public notice for one month, during which time the FCC ensures its sufficiency. If no objections or issues are identified, the FCC issues a FONSI.

Despite the presumption of actions being categorical exclusion, the agency may order additional environmental review on issues beyond the above checklist, or upon consideration of public comments. The agency may also ask for mitigation to reduce project impacts.

Grading soil, removing vegetation, clearing an area or otherwise beginning construction or building without following these requirements or before completion of the FCC's environmental process can constitute a violation of FCC rules and subject the party to potential enforcement action. Granting of a license is NOT an authorization to build unless all environmental review requirements have been met.

Below is more information about the FCC NEPA process and compliance with related environmental statutes.

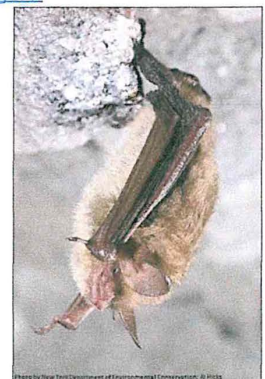
- [NEPA Checklist \(http://wireless.fcc.gov/nepa/EA_checklist.pdf\)](http://wireless.fcc.gov/nepa/EA_checklist.pdf)
- NEPA FAQs
- [NEPANet - A One Stop Shop for NEPA-Related Information \(https://ceq.doe.gov/nepa/nepanet.htm\)](https://ceq.doe.gov/nepa/nepanet.htm)
- [NEPA Fact Sheet \(/sites/default/files/NEPA_Factsheet_111816.pdf\)](/sites/default/files/NEPA_Factsheet_111816.pdf)
- [Form 601 Flow Chart \(/sites/default/files/Form_601_FlowChart.pdf\)](/sites/default/files/Form_601_FlowChart.pdf)
- [Form 854 Flow Chart \(/sites/default/files/Form_854_FlowChart.pdf\)](/sites/default/files/Form_854_FlowChart.pdf)
- [NEPA Process Overview \(/sites/default/files/NEPA_Process_Overview.pdf\)](/sites/default/files/NEPA_Process_Overview.pdf)



Endangered Species Act

Section 1.1307(a)(3) of the Commission's rules, 47 C.F.R. §1.1307(a)(3), requires applicants, licensees, and tower owners (applicants) to consider the impact of proposed facilities on sensitive species and their habitat. Under the Endangered Species Act (ESA), 16 U.S.C. s. 1531 *et seq.*....it is prohibited to "take" (i.e., to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.) Applicants must therefore determine before constructing and before submitting an EA if required whether any proposed facility may affect listed, threatened or endangered species or designated critical habitats, or are likely to jeopardize the continued existence of any proposed threatened or endangered species or designated critical habitats.

The [U.S. Fish and Wildlife Service \(FWS\) \(https://www.fws.gov/endangered/\)](https://www.fws.gov/endangered/), which administers the ESA, provides an [online mapping tool \(https://ecos.fws.gov/ipac/\)](https://ecos.fws.gov/ipac/) to determine which species may need to be considered for proposed facilities. If a qualified biologist determines that proposed facilities may have an effect, a licensee or registrant must notify the FCC and file an environmental assessment. Applicants must submit a request for FWS concurrence with the Applicant's effects determination. If the FWS determines that the proposed facility will affect protected species or habitats, Applicants must enter formal consultation with the FWS. The FCC provides a [letter \(http://wireless.fcc.gov/endangered-species-act/endangered-species-letter.pdf\)](http://wireless.fcc.gov/endangered-species-act/endangered-species-letter.pdf) designating applicants as *non-federal representatives of the FCC for purposes of consultation with the FWS. In significant portions of the US, applicants must follow the FWS Framework to consider effects to the Northern Long-Eared Bat (https://apps.fcc.gov/edocs_public/attachmatch/DA-16-476A1.pdf)*. In some regions, FWS offers Blanket Clearance to proposed facilities meeting certain criteria to streamline these processes.



- [FWS Delegation Letter \(http://wireless.fcc.gov/endangered-species-act/endangered-species-letter.pdf\)](http://wireless.fcc.gov/endangered-species-act/endangered-species-letter.pdf)
- [Online Endangered Species Act Review using IPaC \(http://wireless.fcc.gov/endangered-species-act/IPaC_info_sheet_tower_applicants.pdf\)](http://wireless.fcc.gov/endangered-species-act/IPaC_info_sheet_tower_applicants.pdf)
- [Fact Sheet: \(/file/3819/download\)Minimizing Habitat Fragmentation \(http://wireless.fcc.gov/endangered-species-act/Habitat_Fragmentation_FACT_SHEET.pdf\)](http://wireless.fcc.gov/endangered-species-act/Habitat_Fragmentation_FACT_SHEET.pdf)
- [Fact Sheet: \(/file/3820/download\)Minimizing Effects on Prairie Grouse and Sage Grouse \(http://wireless.fcc.gov/endangered-species-act/Prairie_Grouse_FACT_SHEET.pdf\)](http://wireless.fcc.gov/endangered-species-act/Prairie_Grouse_FACT_SHEET.pdf)
- [Guidance on Northern Long-Eared Bat \(https://apps.fcc.gov/edocs_public/attachmatch/DA-16-476A1.pdf\)](https://apps.fcc.gov/edocs_public/attachmatch/DA-16-476A1.pdf)

Migratory Birds

Under the Note to paragraph (d) of Section 1.1307, the Commission requires an Applicant to prepare an EA that considers the effects on migratory birds when a proposed antenna structure will be over 450 feet above ground level (AGL). Each year, millions of birds collide with communications towers and die. Tall, lit, and guy-wired towers are implicated in significantly more bird fatalities than short, unlit, self-supported towers. However, towers of almost any height have the potential to harm migratory birds, and tower owners can [reduce or minimize these effects \(/file/3818/download\)](#) in a number of ways, often with [little or no cost to the tower owner \(/guides/towers-and-birds\)](#). For example, because birds are attracted to non-flashing lights but less so to flashing lights, using flashing lights can prevent collisions.

The U.S. Fish and Wildlife Service (FWS) has formulated [voluntary guidelines \(https://us-fcc.box.com/s/sc1742pnyw7w14vzzhcz3hrkoft1qn3l\)](#) for tower siting to address potential effects on migratory birds. These guidelines include suggestions on tower siting, height, and lighting to avoid adverse effects to migratory birds. The Avian Power Line Interaction Committee (APLIC), a collaboration of the utility industry, wildlife resource agencies, conservation groups, and manufacturers of avian protection products, also developed [guidance \(http://www.aplic.org/uploads/files/11218/Reducing_Avian_Collisions_2012watermarkLR.pdf\)](#) for methods to reduce bird/power line electrocutions and collisions which reduces bird mortalities and associated power outages. Tower owners should consider incorporating these guidelines into their tower projects and maintenance operations.

As of September 28, 2016, the Federal Aviation Administration (FAA) no longer permits red non-flashing lights on any new tower above 150 feet AGL. The FAA has asked owners of existing towers to submit plans for eliminating the use of non-flashing lights on existing towers; and the FCC and FAA have developed a [process \(/sites/default/files/Light_Changes_Information_Update_Jan_2017.pdf\)](#) by which registrants may do so.



- [Fact Sheet: Addressing Raptor Nesting on Towers \(/file/3821/download\)](#)
- [FAA Advisory Circular on Obstruction Marking and Lighting \(https://us-fcc.box.com/s/ofvtfbg3q8wywypdcs0kf00t68yj8mq2p\)](#)

In order to better protect endangered species and migratory birds, the Wireless Telecommunications Bureau released a [Final Programmatic Environmental Assessment \(PEA\) \(/general/programmatic-environmental-assessment-pea\)](#) that evaluates the potential environmental effects of the FCC's Antenna Structure Registration (ASR) program.

The National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 is implemented through the FCC's environmental rules. Section 106 of the NHPA requires federal agencies to consider the effects of federal undertakings on historic properties. The FCC considers the construction of any communications tower of any height or the collocation of communications equipment using FCC-licensed spectrum a federal undertaking. While Antenna Structure Registration (ASR) is required for some communications towers, the need to register a structure is not determinative of whether the Section 106 process is required.

Commission licensees and applicants are delegated the responsibility for initiating the Section 106 review process for proposed facilities, identifying and evaluating historic properties, and assessing effects. This process includes consultation with the appropriate State Historic Preservation Officer (SHPO) and Tribal Nations that have expressed an interest in the proposed project. For the Tribal Nations, either a Tribal Historic Preservation Office (THPO) or a cultural preservation office have been established at each Tribal Nation and designated the point-of-contact for the Section 106 process. Historic properties are sites, structures, buildings, and objects that are listed on or eligible for listing on the National Register of Historic Places. SHPO's maintain the lists of these historic properties. For Tribal Nations, historic properties include sites and places of cultural and religious significance. Due to the sensitive nature of these historic properties, these places are often not publicly identified. Accordingly, project proponents should engage with the Tribal Nations for this information. Tribal Nations have the option to provide this information to the FCC through its Federal Preservation Officer who will ensure that the information is protected throughout the Section 106 process.

NHPA Information (<http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=36&PART=800&SUBPART=B&TYPE=TEXT>)

- [Title 36 of the Code of Federal Regulations, Part 800, Subpart B. \(/http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=36&PART=800&SUBPART=B&TYPE=TEXT\)](#)
- [Advisory Council on Historic Preservation \(ACHP\) Home Page \(http://www.achp.gov/\)](#)
- [MO&O clarifying licensees' responsibilities in complying with the NHPA. \(/Bureaus/Wireless/Orders/1998/da981580.txt\)](#)
- [Local Section 106 Notice Requirement Template \(/sites/default/files/Local%20Section%20106%20Notice%20Template.docx\)](#)

The Nationwide Programmatic Agreements

The Commission has entered into two Nationwide Programmatic Agreements (NPAs) with the Advisory Council on Historic Preservation (ACHP) and the National Conference of State Historic Preservation Officers (NCSHPO). ACHP oversees NHPA implementation, and NCSHPO represents the State Historic Preservation Officers. These NPAs describe the Commission's Section 106 processes for [new tower construction \(https://www.law.cornell.edu/cfr/text/47/appendix-C_to_part_1\)](#) and [collocation of communications equipment on existing structures \(https://www.law.cornell.edu/cfr/text/47/appendix-B_to_part_1\)](#). In 2016, the ACHP approved the [First Amendment to the Collocation Agreement \(/document/wtb-announces-execution-amendment-collocation-agreement\)](#).

The NPA requires that project proponents use the FCC Form 620 (new towers) and FCC Form 621 (collocations), which are available on the [FCC Forms Page \(/formpage.html\)](#). The Form 620 and Form 621 must be completed by qualified individuals as stated on the forms. These forms are submitted directly to the SHPO and are not sent to the FCC unless requested by the FCC. Project proponents are encouraged to complete the Form 620 and Form 621 using the E106 system as the forms are easier to complete and the system contains internal checkpoints to ensure that they are complete and accurate. Using the E106 system facilitates FCC access to answer questions or address issues during the Section 106 process. Prior to submitting, the applicant must confirm whether the specific SHPO utilizes E-106 for Section 106 reviews and determine their preferred submittal procedures. Many SHPOs are required by state law to maintain hard copies.

If a SHPO has not responded within 30 days, determinations of "No Adverse Effect" can be submitted to the Commission by following procedures outlined in [Public Notice DA 05-599 \(http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-05-599A1.pdf\)](#). Such referrals may be made through the E-106 system when the Form 620 or 621 has been submitted electronically.

If a proposed project will have an adverse effect on historic properties, the project proponent must notify the ACHP using the ACHP's E106 system. The project proponent must engage the SHPO and all consulting parties, including Tribal Nations, about the adverse effect and the potential to mitigate that effect. To proceed beyond the initial determination of adverse effect, the project proponent must provide the SHPO and all consulting parties with an alternatives analysis or plan that demonstrates that the proposed location is the only feasible location due to engineering requirements. The FCC may review these plans.

In addition, the project proponent and the consulting parties should develop appropriate mitigation measures. Mitigation measures should have a public benefit directly tied to the adverse effect. Payments of cash are not appropriate. The project proponent should prepare a [Memorandum of Agreement \(MOA\) \(https://us-fcc.box.com/s/z3rvstc180q7ngfm2j8hico9lnfi6bnn\)](#) to be signed by the FCC, SHPO, project proponent and all consulting parties. For review prior to any party's signature, the draft MOA must be sent as a word document to the FCC at s106.moa@fcc.gov. After the MOA is FCC-approved and signed by all parties, the project proponent must prepare and file an environmental assessment (EA) in accordance with the FCC rules.

Section 106 Tools

[TCNS/E-106 \(http://wireless.fcc.gov/outreach/index.htm?job=tower_notification\)](http://wireless.fcc.gov/outreach/index.htm?job=tower_notification)

[Form 620 \(new towers\) \(/Forms/Form620/620.pdf\)](#)

[Form 621 \(collocations\) \(/Forms/Form621/621.pdf\)](#)

[ACHP Delegation Letter for Section 106 Review \(http://wireless.fcc.gov/section106/nepa106.pdf\)](http://wireless.fcc.gov/section106/nepa106.pdf)

[Webcast \(http://wireless.fcc.gov/presentations/section106-deployment-demo.html\)](http://wireless.fcc.gov/presentations/section106-deployment-demo.html)

[Factsheet \(http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-02-28A1.pdf\)](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-02-28A1.pdf)

[Tribal Declaratory Ruling \(http://wireless.fcc.gov/section106/tribal-declaratory-ruling.pdf\)](http://wireless.fcc.gov/section106/tribal-declaratory-ruling.pdf)

Tribal Notification

The NHPA requires that [federal agencies must consult with any federally-recognized Tribal Nation \(http://www.achp.gov/regs-fees.html#role\)](#) that attaches religious and cultural significant to historic properties affected by an undertaking in carrying out the *Section 106 review* process.

Since 2004, the Commission has maintained the [Tower Construction Notification System \(http://wireless.fcc.gov/outreach/index.htm?job=tower_notification\)](#) (TCNS), an on-line, password-protected system that notifies all Tribal Nations, Native Hawaiian Organizations (NHOs), and State Historic Preservation Officers (SHPOs) of proposed communication tower construction in their areas of interest. Recipients can respond directly to the companies if they have concerns about a proposed construction.

In order to use the FCC's online filing systems, you need an FCC Registration Number (FRN).

The Commission follows [guidance published by the Advisory Council on Historic Preservation \(ACHP\) \(http://www.achp.gov/nap.html\)](#) with respect to the role of Tribal Nations in the Section 106 Review Process.

Indian Tribal Contacts

[Tribal Nations Leaders Directory \(Bureau of Indian Affairs\) \(http://www.bia.gov/WhoWeAre/BIA/OIS/TribalGovernmentServices/TribalDirectory/\)](http://www.bia.gov/WhoWeAre/BIA/OIS/TribalGovernmentServices/TribalDirectory/)

[Tribal Historic Preservation Officers and Tribal Cultural Resource Officers \(http://www.achp.gov/thpo.html\)](http://www.achp.gov/thpo.html)

Section 106 Reviews for Wireless Communications Facilities Construction and Modification Involving Multiple Federal Agencies

In 2009, the ACHP issued a [Program Comment \(http://www.achp.gov/docs/ProgramCommentRUS_NTIA_FEMA.pdf\)](#) to facilitate the deployment of broadband by eliminating duplicative Section 106 reviews for projects regulated by the Commission but funded or otherwise subject to involvement by another federal agency.

The [Program Comment was extended and expanded in 2015 \(https://www.federalregister.gov/articles/2015/09/30/2015-24713/notice-of-amendment-to-program-comment-to-avoid-duplicative-reviews-for-wireless-communications\)](#), and relieves the US Department of Agriculture Rural Utility Service (RUS), National Telecommunications and Information Administration (NTIA), Federal Emergency Management Agency (FEMA), First Responder Network Authority (FirstNet),

Convenience at what Cost?

I have a cell phone, and everywhere I go people engaged with their cell phones. Sometimes I wonder where we are going with this technology, and yet I do appreciate the benefits of having the access to information and my phone. But... at what cost are we enjoying this technology? A growing body of evidence is confirming that cell towers and phones are detrimental to health and environment! The research suggests cellphones could increase our risk for brain cancer and tumors, low sperm count, headaches, as well as impaired memory, hearing, and sleep.

Dr. Joel Moskowitz at UC Berkeley said, "Currently we're not doing a good job in regulating radiation from these devices. In fact, we're doing an abysmal job." Moskowitz says this is a long-time coming. He's partially responsible for bringing this information to light. He sued the Department of Public Health for refusing to release information about the dangers of cellphone radiation back in 2009. Recently he won that case. "People are being injured and harmed by the delay in having this information accessible to them," Moskowitz said.

Just like the tobacco industry of the 1950s, Big Telecom has bought the science and influenced our government. With billions of dollars at stake, the wireless industry protects their profits rather than our health. "Only 25% of studies funded by the wireless industry show some type of biological effect from microwave radiation, while among independently funded studies, 75% show a bioeffect."

The Interior Department has accused the Federal government of employing outdated radiation standards set by the Federal Communications Commission (FCC), a federal agency with no expertise in health. "The electromagnetic radiation standards used by the Federal Communications Commission (FCC) continue to be based on thermal heating, a criterion now nearly 30 years out of date and inapplicable today."

We need to base our decisions on the placement of cell towers and cell phones on current scientific and medical research!

For Reference – Some Studies Showing Cell Tower Health Impacts

Khurana, Hardell et al., Int. J Occup. Envir Health, Vol 16(3):263-267, 2010
“Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations”
<http://www.ncbi.nlm.nih.gov/pubmed/20662418>

--Analysis of 4 studies were from Germany, and 1 each from Austria, Egypt, France, Israel, Poland, Spain
--7 studies showed altered neurobehavioral effects near cell towers
--3 studies showed increased cancer incidence
--Effects occurred < 500 meters from cell towers

H. Eger at al., “The Influence of Being Physically Near to a Cell Phone Transmission Mast on the Incidence of Cancer” (Umwelt-Medizin-Gesellschaft 17,4 2004).

blog.cat/gallery/17983/17983-97698.pdf

--the proportion of newly developing cancer cases is significantly higher among patients who live within 400 meters of a cell phone transmitter.
--relative risk of getting cancer increased by 200% after 5 years operation of the transmitter
--early age of cancer diagnosis

Wolf R, Wolf D, (April 2004) “Increased incidence of cancer near a cell-phone transmitter station”, International Journal of Cancer Prevention, 1(2) April 2004

http://www.powerwatch.org.uk/news/20050207_israel.pdf

Similarly found that within 350 meters of cell phone antennas there was:

-- 300% increased incidence of cancer among men and women
-- 900% cancer increase among women alone
-->4x risk of cancer after 3-7 yrs exposure <350 meters
--early age of cancer diagnosis

Abdel-Rassoul G et al, (March 2007) “Neurobehavioral effects among inhabitants around mobile phone base stations”, Neurotoxicology. 2007 Mar;28(2):434-40

<http://www.ncbi.nlm.nih.gov/pubmed/16962663>

Inhabitants living nearby mobile phone base stations were shown to be at risk for developing neuropsychiatric problems (headache, memory changes, dizziness, tremors, depressive symptoms, sleep disturbance), and some changes in the performance of neurobehavioral functions. Exposed inhabitants exhibited a significantly lower performance than controls in one of the tests of attention and short-term auditory memory [Paced Auditory Serial Addition Test (PASAT)]. Also, the inhabitants opposite the station exhibited a lower performance in the problem-solving test (block design) than those under the station.

Hutter HP et al, (May 2006) “Subjective symptoms, sleeping problems, and cognitive performance in subjects living near mobile phone base stations”, Occup Environ Med. 2006 May;63(5):307-13

<http://www.ncbi.nlm.nih.gov/pubmed/16621850>

--Found a significant relationship between some cognitive symptoms and measured power density; highest for headaches. Perceptual speed increased, while accuracy decreased insignificantly with increasing exposure levels. There was no significant effect on sleep quality.

Dode et al, “Mortality by neoplasia and cellular telephone base stations in the Belo Horizonte municipality, Minas Gerais state, Brazil”, Science of the Total Environment, Volume 409, Issue 19, 1 September 2011, Pages 3649–3665

<http://www.sciencedirect.com/science/article/pii/S0048969711005754>

ElectromagneticHealth.org

Cancer deaths in center of city:
 --within 100m 4.342/1000 (35%increase if within 100 meters)
 -- >1000m 3.212/1000

Santini R et al, (September 2003) "Symptoms experienced by people in vicinity of base stations: II/ Incidences of age, duration of exposure, location of subjects in relation to the antennas and other electromagnetic factors", Pathol Biol (Paris). 2003 Sep;51(7):412-5
<http://www.ncbi.nlm.nih.gov/pubmed/12948762>

Santini R et al, (July 2002) "Investigation on the health of people living near mobile telephone relay stations: I/Incidence according to distance and sex", Pathol Biol (Paris) 2002 Jul;50(6):369-73
<http://www.ncbi.nlm.nih.gov/pubmed/12168254>

Santini et al found significant health effects on people living within 300 meters of mobile phone base stations. Fatigue, sleep disturbance, headaches, concentration problems, depression, memory problems, irritability, cardiovascular problems, hearing disruption, skin problems, dizziness, etc.

Eskander EF et al, (November 2011) "How does long term exposure to base stations and mobile phones affect human hormone profiles?", Clin Biochem. 2011 Nov 27. [Epub ahead of print] <http://www.ncbi.nlm.nih.gov/pubmed/22138021>
 --Showed significant decrease in volunteers' ACTH, cortisol, thyroid hormones, prolactin for young females, and testosterone levels from RF exposures from both mobiles and cell towers.

Levitt & Lai, "Biological Effects from Exposure to Electromagnetic Radiation Emitted by Cell Tower Base Stations and Other Antenna Arrays", Environmental Reviews, 2010
 --Over 100 citations, approximately 80% of which showed biological effects near towers
 --Built case for 'setbacks' and need for new exposure guidelines reflecting *multiple and cumulative* exposures

Sage & Pall, January 2014, Presentation to Washington State - Symptoms and RF levels in Various Cell Tower Studies

Study	RFR Level	Reported Health Impacts
Navarro (2003)	0.01 – 0.11 uW/cm ²	Fatigue, headaches, sleeping problems
Thomas (2008)	0.005 – 0.04 uW/cm ²	Headaches, sleep and concentration difficulties
Heinrich (2010)	0.003 – 0.02 uW/cm ²	Headaches, irritation, concentration difficulties
Thomas (2010)	0.003 – 0.02 uW/cm ²	Behavioral problems in children, adolescents
Mohler (2010)	0.005 uW/cm ²	Sleep disturbances
Hutter (2006)	0.05 – 1.0 uW/cm ²	Headache, sleep, concentration problems, other neurological problems.
Kundi (2009)	0.05 – 1.0 uW/cm ²	Review of 14 studies on cell tower-level RFR at and above 0.05 – 1.0 uW/cm ² impairs health.
Buchner (2012)	0.006 – 0.01 uW/cm ²	Significant impact on stress hormones; children and chronically ill adults most at risk.
Oberfeld (2004)	0.01 uW/cm ²	Sleep and concentration disruption, fatigue and cardiovascular problems.
Zwamborn (2003)	0.13 uW/cm ²	Anxiety, hostility, impaired cognition
Avendano (2012)	0.5 – 1.0 uW/cm ²	Sperm damage (DNA fragmentation, low motility) from laptop in wireless mode (in lap)



Carpenter, D. O. "Human disease resulting from exposure to electromagnetic fields", Reviews on Environmental Health, Volume 28, Issue 4, Pages 159-172. Summarizes excessive RF radiation increases risk for cancer, male infertility and neurobehavioral abnormalities.

Netherlands Organization for Applied Scientific Research (TNO), Study for the Netherlands Ministries of Economic Affairs, Housing, Spatial Planning and the Environment and Health, Welfare and Sport, *"Effects of Global Communications System Radio-Frequency Fields On Well Being and Cognitive Function of Human Subjects With and Without Subjective Complaints"*, (September 2003)

-- *Notes by Grahame Blackwell*: Found significant effects on wellbeing, according to a number of internationally-recognised criteria (including headaches, muscle fatigue/pain, dizziness etc) from 3G mast emissions well below accepted 'safety' levels (less than 1/25,000th of ICNIRP guidelines). Those who had previously been noted as 'electrosensitive' under a scheme in that country were shown to have more pronounced ill-effects, though others were also shown to experience significant effects.

Oberfeld, Portoles, Navarro et al, *"The Microwave Syndrome—Further Aspects of a Spanish Study"*, Public Health Department Salzburg, Austria, University Hospital La Fe. Valencia, Spain, Department of Applied Physics, University Valencia, Spain, Foundation European Bioelectromagnetism (FEB) Madrid, Spain, Presented at an International Conference in Kos (Greece), 2004

Notes by Grahame Blackwell: This study found significant ill-health effects in those living in the vicinity of two GSM mobile phone base stations. They observed that: "The strongest five associations found are depressive tendency, fatigue, sleeping disorder, difficulty in concentration and cardiovascular problems." As their conclusion the research team wrote: "Based on the data of this study the advice would be to strive for levels not higher than 0.02 V/m for the sum total, which is equal to a power density of 0.0001 $\mu\text{W}/\text{cm}^2$ or 1 $\mu\text{W}/\text{m}^2$, which is the indoor exposure value for GSM base stations proposed on empirical evidence by the Public Health Office of the Government of Salzburg in 2002."



Usfie, Israel (as shown in Documentary "Full Signal"). Cancer cases only found in vicinity of new cell towers with very few exceptions. See the film to hear about the study which was conducted by a local doctor who noticed increasing cancers following installation of cell towers on a ridge line in the city. www.FullSignalMovie.com

Naila Study, Germany (November 2004), Report by researchers (five medical doctors) "Following the call by Wolfram König, President of the Bundesamt für Strahlenschutz (Federal Agency for radiation protection), to all doctors of medicine to collaborate actively in the assessment of the risk posed by cellular radiation, the aim of our study was to examine whether people living close to cellular transmitter antennas were exposed to a heightened risk of taking ill with malignant tumors. The basis of the data used for the survey were PC files of the case histories of patients between the years 1994 and 2004. While adhering to data protection, the personal data of almost 1,000 patients were evaluated for this study, which was completed without any external financial support. It is intended to continue the project in the form of a register.

The result of the study shows that the proportion of newly developing cancer cases was significantly higher among those patients who had lived during the past ten years at a distance of up to 400 meters from the cellular transmitter site, which has been in operation since 1993, compared to those patients living further away, and that the patients fell ill on average 8 years earlier. In the years 1999-2004, i.e. after five years' operation of the transmitting installation, the relative risk of getting cancer had trebled for the residents of the area in the proximity of the installation compared to the inhabitants of Naila outside the area."

FEARLESS PARENT™

Thinking ... For a Change

Home Avoiding Toxins Cell Tower Hypocrisy: Rescuing Firefighters Not Kids

Cell Tower Hypocrisy: Rescuing Firefighters Not Kids



Cell Tower
Hypocrisy:
Rescuing
Firefighters
Not Kids

Fearless Parent

by Susan Foster

*Editor's note: California is **once again** in a trendsetting legislative battle with dramatic implications for our collective public health. Big Telecom wants fewer impediments to deliver next generation connectivity: more, faster, e-ver-y-where. It's time to say: NO. The technology we love is harming us and, most of all, our precious children who **absorb ten times more radiation than adults**, with their thinner skulls and higher water- and ion-content brains. Please share this post widely.*

Dear Gov. Jerry Brown,

I have a story to share with you. It involves inside information from the telecommunications industry; firefighters and what their brains look like following a five-year exposure to a cell tower outside their station; and a bill currently flying through the California Senate and Assembly.

SB 649 is going to land on your desk sometime in early September.

Veto this bill

As you know, many of us don't like SB 649. More than half the cities in California comprising more than 2/3 of California's citizens don't want this bill to become law.

SB 649 would essentially deregulate the telecommunications industry by giving them the right to force cities and counties to lease available lampposts, buildings, and the right-of-way for cell towers and transmitting antenna which will blanket our neighborhoods and our cities with 5G millimeter waves. 5G, or 5th generation wireless, is virtually untested on human beings. Electrical equipment the size of refrigerators will be allowed, along with back-up generators filled with diesel fuel.

Our exposure to radiation from towers has increased exponentially. With SB 649, California is about to add 50,000 more "small cells" to approximately 300,000 cell towers currently in existence nationwide.

The digital divide will remain a chasm

One of the selling points in legislatures across the country is that 5G will help close the [digital divide](#). That sounds great.

The truth, however, is communications providers have repeatedly demonstrated that they will not make advanced services available to low-income or rural areas unless they are required to do so. SB 649 contains no such requirement.

Driverless cars over children

Most of all, we're worried about the most vulnerable among us – our children. In the name of faster downloads, appliances that communicate with smartphones in the [Internet of Things \(IoT\)](#), and driverless cars, what good is all this progress if you are putting our children with their developing brains and rapidly dividing cells at risk?

We don't want to sacrifice our children's health just so we can preheat the oven with the touch of our phones allowing us to pop a chicken in to roast the minute we walk in the door after a quick trip to the store in a car that just drove itself.

Wireless radiation and DDT have in common

SB 649 would increase harmful radiation that the World Health Organization's cancer committee IARC classified a 2b "possible human" carcinogen in May 2011.

This verdict put everything on the RF – EMF spectrum into the same category as DDT, which has been banned in the U.S. since 1972. The vote on wireless radiation wasn't even close. It was 29 to 1.

The only thing that kept this radiation from being classified as a 2a "probable human" carcinogen was a lack of unbiased animal studies.

Reasons why the NTP study is such a big deal

Well, Gov. Brown, now we have one. And for a country with a paucity of government research on RF radiation since Ronald Reagan defunded the EPA's research around the same time the cell phone industry was taking in the early 1980s, the U.S. really came through big time with a rat study from NIH's National Toxicology Program (NTP).

The \$25 million NTP study found brain cancer and heart cancer when rats were exposed to full body cell phone radiation, not unlike the 24/7 exposure our children will be receiving if you sign SB 649 into law.

DNA damage from wireless radiation

And speaking of children, we have a profound desire not only for them to be healthy, but for their children to be healthy, as well. According to Microwave News, there was evidence of DNA damage coming out of the NTP study.

Please keep that, and the protection of our children in mind, when SB 649 hits your desk.

The firefighter exemption tells the tale

In a move that strikes me as a lesson for all of us to absorb, one group of Californians is already protected from SB 649. One's mind leaps immediately to the unborn, to children, to the elderly, to those who are infirm or disabled.

It is none of these groups.

The legislature has granted an exemption after a 17 year fight for recognition that cell towers were causing them harm, and that group is among the strongest, healthiest among us – the firefighters.

Why? Because they deserve it.

How do I know? Here's where the story I promised you comes in.

Telecom insider emerges from the shadows

Almost 20 years ago, I was walking our family dog after watching the school bus disappear from sight. From behind a small cluster of palm trees a woman stepped out of the shadows. She asked if we could speak, but insisted on doing so out of sight of passersby. She confirmed who I was, and asked if she had her information correct that I was a medical writer. I said I was, and suddenly the vaguely familiar face had more meaning.

She was the young wife of a telecom executive who lived several streets over. Our children went to the same school. I was then asked by the stranger if I could lead the neighborhood fight against a proposed cell tower being permitted for the golf course surrounding our neighborhood.

I responded with a question that seems almost inconceivable today. "What's a cell tower?" I was clueless. I'm embarrassed to say I didn't even question how voice data traveled from one cell phone to another.

The executive's wife told me she would point out a few faux metal palm trees to me, yet cautioned once I started recognizing these tall metal conduits for radiation from one point to another, I would never stop seeing them. Data was carried on the back of microwaves, she explained, and they could penetrate every living thing – plant, animal, and human.

I asked if she had any science to support this. "Yes," was her one syllable response. How do I get my hands on the studies, I wanted to know. She reassured me it would be taken care of, and then asked me to tell no one we had talked. Her husband's job was at risk.

As I was about to continue on a walk that was already in the process of changing my life, I turned back and asked an uncommonly bold question for me, "Am I correct that you were diagnosed with cancer several years ago?" Yes, she had been. My next question was answered even before I asked.

"It's the children I'm most worried about"

"Some of my husband's colleagues have had brain cancer. It feels beyond coincidence. They all know at some level it's dangerous, but they're making so much money." She paused, "It's the children I'm most worried about." I nodded in agreement about the children. More information was shared before I followed my dog out of the shadows. I struggled to assimilate what I had just heard. The industry knew this stuff caused cancer and they were still permitting cell towers for neighborhoods?

A numbness overcame me the rest of my walk through the neighborhood. The telecom executive's wife had left me with a daunting challenge. I had to lead a neighborhood fight against a cell tower, yet we had to kill this permit without bringing up health before a city or county council.

Bureaucratic capture of the FCC ties our hands

The Telecom Act of 1996 forbade localities from opposing cell towers on health grounds, only aesthetics. In America?

Seriously? Yes, seriously.

It's called the preemption clause. As long as the FCC says it's okay – and that means under 1000 uW/cm² of radiation for a cell tower – it is presumed safe. Yet the FCC wasn't a health agency and they didn't do their own studies. It seems there was a **revolving door** between the FCC and the CTIA – The Wireless Lobby, leaving me with no reassurance of safety at all.

I was swimming in a sea of new information that I wished I didn't know, yet the parent in me longed to know more. My wish was about to come true.

Secret agent in the night, with the science

For the next six weeks, perhaps two mornings a week, I would open the front door to let our dog outside before waking the children. There, placed squarely on the doormat, would be an unmarked manila envelope with two or three scientific studies inside.

This was my first glimpse into what the telecom industry knew in 2001, and has failed to this day to share with the public. A **1994 study by Henry Lai and N.P. Singh** of the University of Washington struck me as the most worrisome.

RF radiation could damage DNA in the brain cells of rats.

We beat back the neighborhood cell tower

After an intense six week campaign, we prevailed with the help of a former union official who coached us in planning a march along a boulevard leading to the golf club at the back of the neighborhood. It was strategically timed for the weekend of the former San Diego Chargers' quarterback Stan Humphrey's celebrity golf tournament.

We created bad PR for the golf club willing to lease land to telecom, and bad PR for the wireless carrier.

The permit was pulled the day before our march.

Firefighters wanted help, too

Following our success, we were interviewed on TV. A few weeks later, I received a telephone call from a firefighter who had seen me speaking for the neighborhood group. He said their fire station in San Diego was getting hit with 24 antennae on the roof of the station. They were out of money and out of time.

Could I write an appeal?

I said I would try, but explained we couldn't do so based on health concerns. The firefighters were stunned. These guys risk their lives for us every day of the week and they did not have a right to say they didn't want 24 antennae on the roof of their fire station because the radiation was a health risk?

How could this be?

Telecom Act of 1996 preempts our rights

Check out [Section 332\(c\)\(7\)\(B\)\(iv\) of The Telecommunications Act of 1996](#). It preempts zoning authority from local governments. Aside from aesthetics, a city has no voice.

I wrote the firefighters' appeal using a safety angle. It bought us time. One cell carrier went elsewhere.

We then worked to educate the fire chief about the dangers of wireless radiation. Fire chiefs often rent out space on the stations. By bringing in more revenue for the city, a chief's job is more secure. But the rank and file pay the price.

It comes down to the age old issue of money.

Canaries in the coal mine... with red fire hats

I began hearing more stories of firefighters who literally could not function in their jobs, as guardians of society. Once cell towers were activated on or adjacent to their stations, many – depending on the location of the tower and the direction the beam of radiation was following — developed severe headaches, insomnia, and foggy thinking.

These are not symptoms we wish to see in our First Responders.

Exposing the truth is what parents do

And so, as parents who care passionately about our children's futures know to do, I decided to take matters into my own hands. If my own government didn't care enough to fund studies into the hazards of RF radiation, and if the telecom industry was allowed to get away with [threatening universities and funding](#) where good science was taking place, we had to find other ways of exposing the truth.

In 2004, I organized a [SPECT brain scan pilot study of firefighters](#) who had been exposed to a cell tower on their station for over five years. We found brain abnormalities in all firefighters tested.

Res. 15 banned cell towers on fire stations

In 2004, I co-authored [Resolution 15](#), which was passed overwhelmingly by the International Association of Firefighters. Res. 15 urging a moratorium on the placement of cell towers on fire stations

in the US and Canada based not only on the SPECT scan study of California firefighters, but on **existing science**.

I then helped the Los Angeles **IAFF** locals as they aligned with law enforcement unions to **fight FirstNET towers** on their stations.

There is a solid history of firefighters becoming ill in close proximity to cell towers. There are human and financial costs associated and the state needs to hear their story, Gov. Brown.

The whole country needs to hear their story.

Supermen's kryptonite: brain damage, infertility

The symptoms experienced by the firefighters who participated in the SPECT brain scan study were similar to firefighters in other stations who live in the shadow of cell towers.

It is important to note that all the men we studied had passed rigorous physical and cognitive exams prior to being hired by the fire department. In California you have to score in the top 98th or 99th percentile to even be hired by the fire service. These were extremely bright, healthy men. For testing purposes we excluded men who had worked HazMat, as we did not want chemical exposure clouding the picture.

The firefighters' symptoms after a five-year exposure to a cell tower adjacent to their station included:

- headaches
- extreme fatigue
- cognitive impairment
- anesthesia-like sleep where the men woke up for 911 calls "as if they were drugged"
- inability to sleep
- depression
- anxiety
- unexplained anger
- infertility
- immune-suppression manifest in frequent colds and flu-like symptoms

Shocking stories of cognitive and other damage

Here is how these symptoms translated to real-life responses when we, as a society, need our firefighters the most:

- On several occasions firefighters got lost on 911 calls in the town they grew up in. They used to ride their bikes down these streets. Yet they got lost driving a fire engine.

- In another instance, the emergency bell sounded, and four firefighters awakened from what can only be described as a severe stupor. They got dressed in their protective gear as quickly as they could, slid down the pole, climbed in the truck – two in front and two in back – and just sat in the rig with the alarm sounding in the background. Finally the captain turned to the engineer who was holding the keys in his hand and said, “Hey, aren’t we supposed to be doing something?”
- A medic with 20 years of experience who had never made a mistake and prided himself on that fact forgot basic CPR in the midst of resuscitating a coronary victim. Because the men knew they were struggling to function in the face of the classic radiation poisoning, they looked out for each other. The captain had been counting chest compressions and took over, but it was a potential risk to the victim and a shattering personal experience for the medic.
- This is a relatively small fire department, but most of the men were at an age where they were starting families or adding to them. Yet for three years there were no live births among their wives. There appeared to be an inability to conceive, and there were several miscarriages. Three years after the tower was installed, a healthy son was born to one firefighter and his wife. At age two he was diagnosed with autism.

The brain scans of these six men revealed a pervasive, hyper-excitability of the neurons, which suggested the exposure to RF (microwave) radiation was causing the neurons to continually fire without benefit of rest. When neurons (brain cells) cannot rest, they ultimately die.

Yet more immediately, we found cognitive impairment, delayed reaction time, and lack of impulse control in all six men tested.

Holy smokes!

Gov. Brown, if we found this degree of damage in big, strong, previously healthy firefighters, just imagine what SPECT brain scans might reveal in children with thinner skulls, developing brains, and rapidly dividing cells.

FCC guidelines permit even more radiation

The fire station cell tower measured at 1 to 2/1000th of the allowable FCC limit of non-ionizing radiation. That means the towers could be almost 1000 times more powerful than the level the firefighters were exposed to, and still be considered within FCC guidelines. And yet even at these “low” levels of radiation, we found brain abnormalities and measureable neurological deficits.

If your children or other family members become ill as a result of a 5G transmitting antenna on a lamppost outside your child’s bedroom window, the carrier is protected from a lawsuit.

Even more terrifying?

The cell tower that radiated the firefighters was 2G, or 2nd generation technology. With SB 649 we're talking 5G with its untested millimeter wave used in airport body scanners and the military.

Lesson learned from six brave men

The firefighters' most important lesson to us as a state, and as a society, may be that if we allow the buildout of cell towers so they become commonplace in front of homes and schools, just as they are now on fire stations, we will be facing not just a growing risk of cancer for ourselves and our children, but a neurological tsunami of illnesses from ADHD to autism to Alzheimer's.

Do I have statistics to back up the theory that the firefighters whose stations have long been targeted for cell tower placement are harbingers of what is happening to society?

Yes, I do.

Rising ADHD, autism, Alzheimer's, anxiety

More than **one in ten children received an ADHD diagnosis** in 2011 according to the CDC, and that represents a 42 percent rise from a decade earlier. Most of the costs were incurred by adults due to productivity and income losses and they're staggering. CHADD, the **National Resource on ADHD, evaluated the costs** based on a review of 19 research studies and found for children and adults a range between \$143 billion to \$266 billion (adjusted to 2010 U.S. dollars).

The Autism Society puts the **prevalence of autism in U.S. children** as having increased by 119.4 percent from 2000 (1 in 150) to 2010 (1 in 68), extrapolating from CDC stats. **Autism services cost U.S. citizens** \$236 – \$262 billion annually.

The rate of **people dying from Alzheimer's disease in the United States** rose by 55% over a 15-year period according to new data from the Centers for Disease Control (May 2017).

According to the Alzheimer's Organization, Alzheimer's is the most expensive disease in America, costing more than cancer and heart disease. In 2017, the **direct costs to American society of caring for those with Alzheimer's** and other dementias will total an estimated \$259 billion. The Alzheimer's costs to Medicare and Medicaid alone, for the same year, are staggering; together they will spend an estimated \$175 billion caring for those with Alzheimer's and other dementias – 68 percent of total costs.

If that didn't make you anxious enough...

The National Institute of Mental Health reported 25% of kids between ages 13 and 18 will experience an anxiety disorder. This is a **20-fold increase** over the last 30 years.

ADHD, autism, Alzheimer's, anxiety. And this is just the A's.

Radioactive isotopes and technicolor brains

Six firefighters had radioactive isotopes injected into their bloodstreams that lit their brains up in diagnostically-meaningful colors. Gov. Brown, you might ask what this has to do with these statistics and numbers? I suggest they may have a lot to do with explaining how the incidence rates of these neurological diseases and disorders got so inexplicably high.

These bold, fearless firefighters may not be your typical canaries in the coal mine, but we brought the coal mine to these grand men and women of the fire service. Many of them are ill, and we need to see them as possible harbingers of what is to come to the rest of us.

Explosion of wireless a causal factor?

Independent research has shown a host of adverse neurological and immunological effects from cell towers.

Is there a correlation of increases in ADHD, autism and Alzheimer's with an increase in the number of cell towers? The increase in mobile phone subscribers gives a better sense of the trend. There were just over 44,000,000 wireless subscriber connections in 1996. By 2016, 20 years later, there were 395,881,497 subscriber connections according to the CTIA.

Our exposure to radiation from towers has increased exponentially. With SB 649, California is about to add 50,000 more "small cells" to approximately 300,000 cell towers currently in existence nationwide.

An exemption for firefighters but not for kids?

The state clearly honors the sacrifice of California's firefighters and is concerned about the health risks they face from cell towers. After all, it granted them an exemption from SB 649.

Yet, firefighters are the strongest of the strong. What does that imply for the rest of us?

Gov. Brown, shouldn't we weigh the risk to our children of untested 5G before deployment of cell towers in front of homes, schools, parks, playgrounds such that our children are bathed in millimeter waves 24/7?

When did wireless become oxygen? There's nothing we cannot do wired that we're presently doing utilizing wireless technologies except talk on a cell phone. Let's consider the risk in that context.

Leading the world, not just California

Your voice was heard around the world in July when crowds cheered in Hamburg, Germany as you announced California would gather leaders from around the world for a global warming summit next year. The *New York Times* called you America's *de facto leader on climate change*.

You will have the power to march in lockstep with half the other states in this country attempting to fast track 5G infrastructure. Or you can tell California – and everyone listening – that we will pause, test, and protect first.

Veto the bill + a moratorium on 5G and IoT

We are asking you to be that leader now, and study the [5G millimeter wave](#) that has the ability to heat skin, eyes, and testes. 5G will be a ubiquitous presence in our lives and in our homes, 24/7, with no “off” switch, no reprieve, and it has never been studied on a human population. Consider all the phones, WiFi, tablets, and a disquieting number of cell towers already in existence.

We do not want a telecom usurpation of local control over our communities, and a blanket of radiation over our homes and our children.

Gov. Brown, put your pen down (please)

Before you sign, we beseech you to pause, bring in independent experts from all over the world, and make California a leader in children’s health over the Internet of Things. Study the effects. Do not let our children become guinea pigs any more than they already are. Please put your pen down, Gov. Brown.

You’ve got mail

I’m asking every concerned parent to mail, email, or fax this letter to you and just say NO to SB 649 and 5G everywhere:

Governor Jerry Brown
c/o State Capitol, Suite 1173
Sacramento, CA 95814

Fax: (916) 558-3160

[Email link](#) (or manually enter: <https://govapps.gov.ca.gov/gov39mail/>)

**Respectfully yours,
Susan Foster**

ps. For more information about radiation risks, check out some great FP posts [here](#) and [here](#).

Susan Foster is a medical writer who has worked with firefighters on health, safety and policy with respect to cell towers on their stations since 2000. She organized a brain study of California firefighters in 2004 and was the original author of Resolution 15 passed by the IAFF in 2004. She is an Honorary Firefighter with the San Diego Fire Department and a U.S. Adviser to the UK’s Radiation Research Trust.