NATURAL ENVIRONMENT

2

2.1 INTRODUCTION

Open space, agricultural resources, and the natural environment are an integral part of Dixon's sense of place. The community is surrounded by fertile agricultural land, the groundwater is abundant and high quality, and the delta breezes blow in most evenings with cool, fresh air. From the origins of European settlement in the area through to the present day, Dixon's agricultural heritage is evident in its respect for the land.

This Element addresses the natural environment in Dixon, including open space and agriculture, water resources, and local plants and animals; conservation and stewardship, including conservation of water and energy and waste reduction; and community resilience, which includes sections dealing with hazards and safety, climate change, and emergency preparedness and with pollution and environmental justice. Where topics, policies, and actions from other chapters overlap with Natural Resources and Open Space, references to those chapters are noted.

This Natural Environment Element incorporates the City of Dixon Natural Environment Element Background Report, found in Appendix X of the General Plan. This report includes additional context and background information about seismic and geologic hazards, flood hazards, fire hazards, emergency preparedness and response, hazardous waste and materials, agricultural and ecosystem pests, drought, extreme heat, severe weather, and human health hazards, including the populations and assets that are most vulnerable to each of these hazards due to climate change.

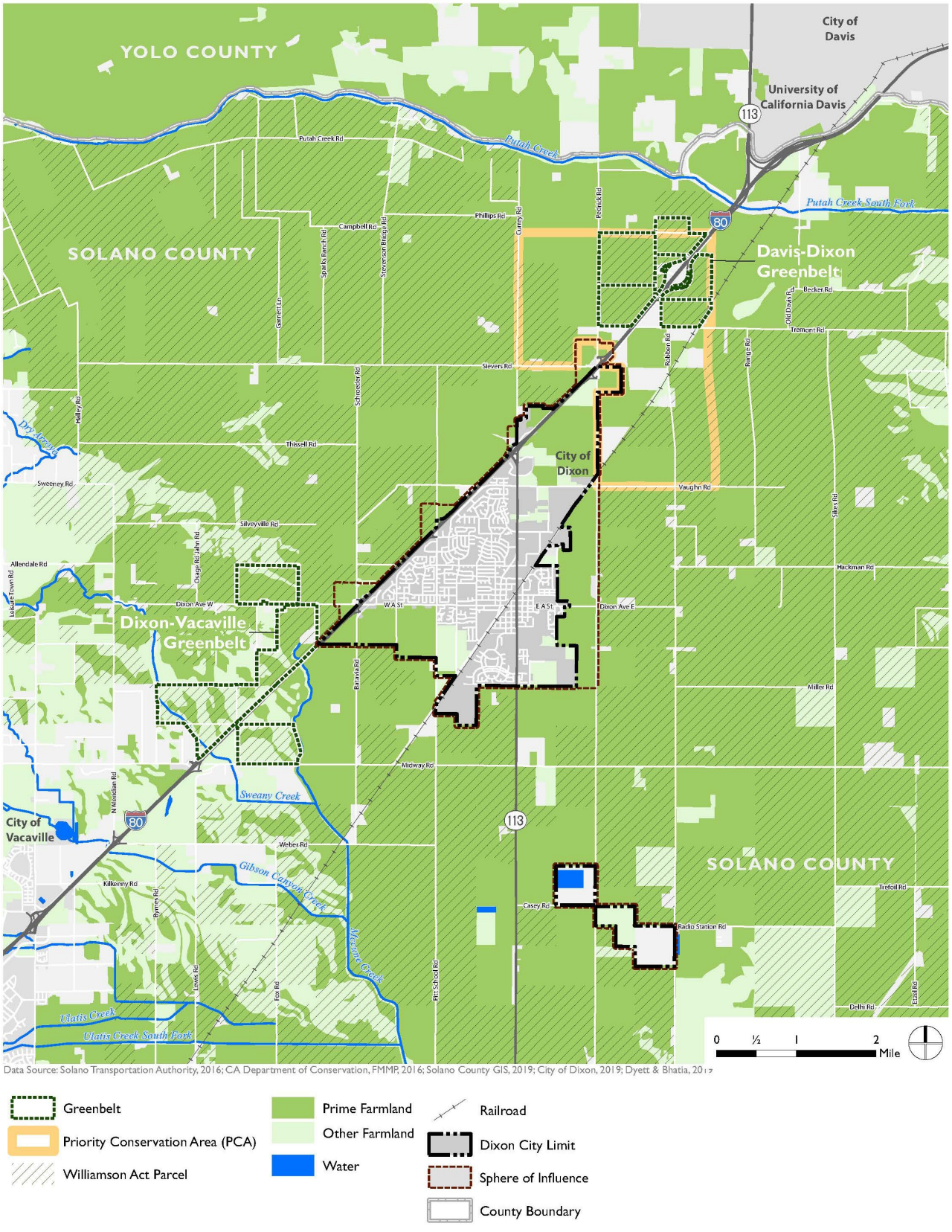
2.2 NATURAL RESOURCES IN DIXON

AGRICULTURAL LAND AND NATURAL OPEN SPACE CONSERVATION

Western-style farming began in today's Dixon in the mid-1880s with subsistence farming and raising livestock. Early

farmers and ranchers settled in the fertile lands around Dixon, and by 1900, had made a name for Dixon as "Dairy City." Dixon's strong agricultural heritage continues to this day, with cattle and sheep still numbering among Solano County's top ten crops by value. The area's most valuable other crops include walnuts, nursery products, almonds, tomatoes, alfalfa, grapes, sunflowers, and wheat, many of which can be seen growing in the fields right next to Dixon's homes and businesses.

Figure NE-1 Open Space and Agricultural Land



Today, Dixon is a community ringed by protected open space, primarily land in active agricultural production. Solano County has over 200 square miles of prime farmland, classified by the California Department of Conservation's Farmland Mapping and Monitoring Program as having the best combination of characteristics for crop production. These lands can produce high-yield crops due to excellent soil quality, lengthy growing season, and dependable irrigation. Other nearby farmlands have some of these characteristics, and sustain fruit trees, crops, or livestock. As shown in Figure NE-1, any of the Dixon area's agricultural lands are protected by the California Land Conservation Act of 1965, otherwise known as the Williamson Act, which aims to discourage the unnecessary and premature conversion of farmland to other land uses. The Williamson Act gives tax incentives to landowners who agree to maintain agricultural uses on their land for period of ten years, with automatic renewal.

Hundreds of acres of agricultural land around Dixon have been additionally preserved as farmland through greenbelts, innovative conservation strategies which use easements to protect farmland. The land is purchased, has agricultural easements applied, and is then resold to farmers, maintaining the easements and preserving the agricultural use in perpetuity. The Vacaville-Dixon Greenbelt, which the City of Dixon purchased in partnership with the City of Vacaville in 1996, contains 1,003 acres of agricultural lands. In 2005, the City of Dixon partnered with the City of Davis, UC Davis, California Department of Conservation, and the U.S. Department of Agriculture's Natural Resource Conservation Service to begin purchasing land for the Davis-Dixon Greenbelt, which currently contains over 400 acres of farmland, and is managed by the Solano Land Trust. Conserving these important agricultural resources is critical for maintaining Dixon's agricultural character, and for contributing to air and water quality, local habitat, economic sustainability, and quality of life.

Agricultural and Ecosystem Pests

Agricultural pests and diseases can affect crop plants, orchards, and nurseries throughout and surrounding the City of Dixon. Pests and diseases can slow the growth of plants, inflict damage, or lead to fatalities. Pesticides and herbicides can help crops resist pests and diseases, and new crop varietals may be pest resistant, but quickly evolving pests may make it difficult for some plant species to survive.

Agricultural pests and diseases in Solano County include false yellowhead (Dittrichia viscosa), Mediterranean fruit fly (Ceratitis capitata), Pierce's disease, and sudden oak death. The Solano County Agricultural Department, in cooperation with state and local agencies, has established eradication, quarantine, and control programs to minimize the spread of these pests and diseases.

Agricultural and ecosystem pests will likely be an ongoing presence in Solano County and Dixon, though their activity can be partially managed via the County's pest-control initiatives. Pest activity is likely to increase as higher temperatures caused by climate change increase the activity window for pests and diseases. Row crops can be affected by fungal pathogens and invasive disease vectors as temperatures continue to rise, affecting the quality and viability of crops.

WATER RESOURCES

Surface water resources in and near Dixon include vernal pools, irrigation and drainage canals, and local detention ponds, as shown in Figure NE-2. Vernal pools are formed by winter and spring rainwater, and last for only a few months. Irrigation ditches and canals flow through the lands around Dixon: the Dixon Resource Conservation District, established in 1952, restructured naturally-occurring creeks and regional drainage paths into a 70-mile system of ditches and canals known as the Dixon Drain. Originally constructed to manage winter rainwaters, the Drain now also collects irrigation tailwater year-round; run-off waters drain to Ulatis Creek and Hass Slough, eventually entering the Sacramento River Delta and flowing into Suisun Bay and San Francisco Bay. Dixon's Ponds A, B, and C, south of the City, retain water to help to prevent flooding, are planted with native vegetation to filter water, and allow water infiltration into the ground. (Chapter 4: Public Facilities and Services contains more details about stormwater management in Dixon.)

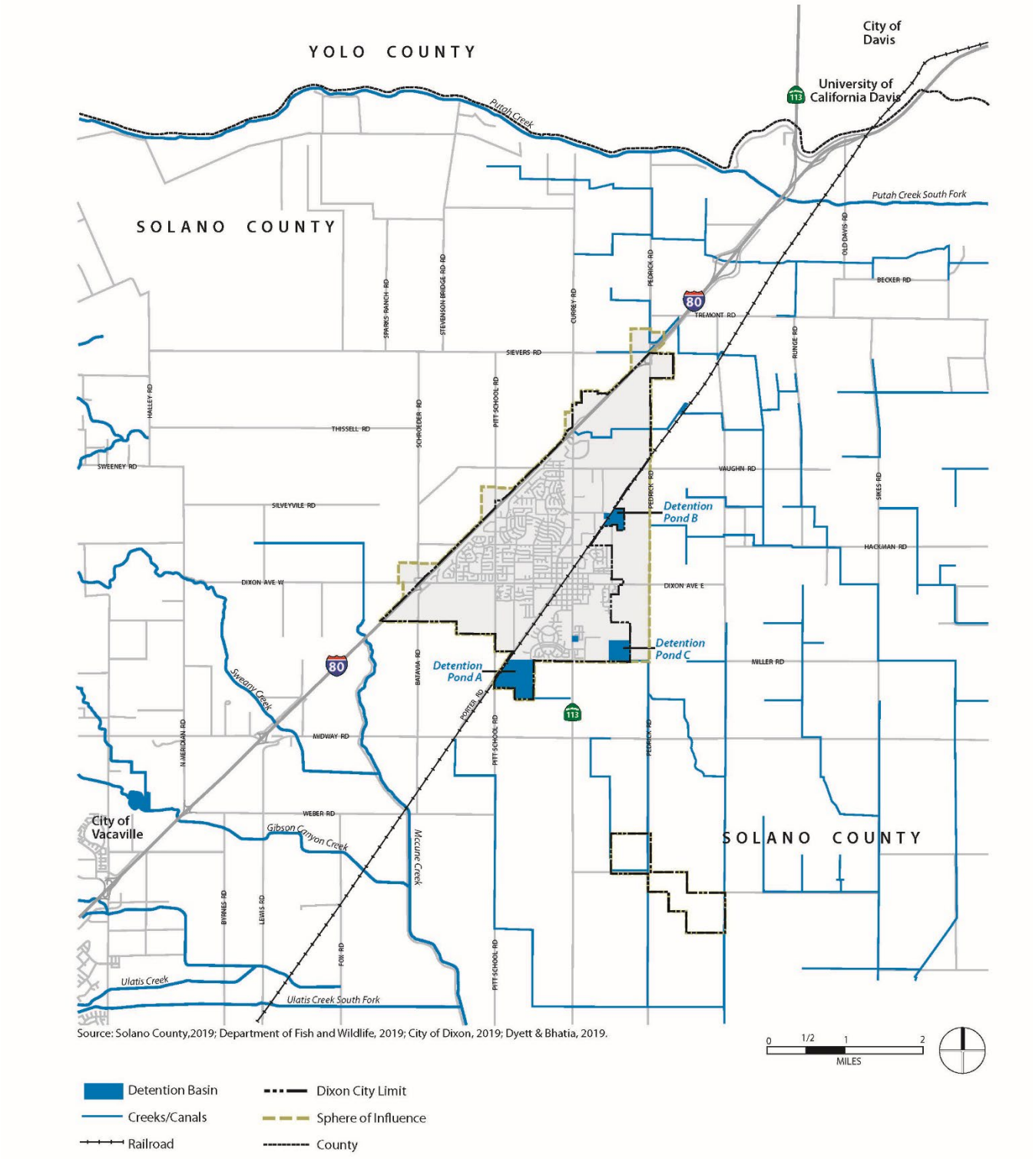
These water resources are subject to California laws that require surface waters be used beneficially (including for municipal or domestic supply, fishing, groundwater recharge, habitat, recreation, or agriculture), and require water management practices that ensure that water is not wasted.

Dixon's groundwater is part of the Sacramento Valley – Solano Subbasin, which is roughly bounded by Putah Creek to the north, Davis and Fairfield to the east and west, and the San Joaquin River near Pittsburg to the south. Without proper management, groundwater basins can be overdrawn, leading to less storage capacity, poor water quality, less overall available water, and even ground subsidence, in which less water in the ground causes soil to compact and sink, cracking infrastructure and destabilizing buildings. Groundwater levels can also be impacted by urban places that contain extensive impermeable surfaces like asphalt and concrete, which restrict water infiltration into the soil.

VERNAL POOLS

Situated in the gently rolling topography of the Central Valley, the claypan soils around Dixon create naturally- occurring vernal pools each spring: temporary lakes and ponds that form when impermeable soils trap rainwater aboveground. These vernal pools provide critical habitat to hundreds of local species. In 1987, the National Park Service designated the Dixon Vernal Pools, centered about ten miles south of the City, as a National Natural Landmark: the best example of valley needlegrass grassland and a critically rare natural community type.

Figure NE-2 Water Resources



A northern shoveler duck. Photo by Bobby Vogt.

California's groundwater is regulated under the 2014 Sustainable Groundwater Management Act (SGMA); based on high expected population growth, groundwater reliance, number of active wells, and possibility of overdraft and ground subsidence, the Solano Subbasin is currently designated as a medium-priority basin. Solano County Water Agency monitors the Subbasin's groundwater levels, which have been stable since the Monticello Dam's construction in the late 1950s ensured a year-round site for groundwater infiltration.

The Solano Subbasin water provides all of the City of Dixon's municipal water supply, pumped up from five wells. The Subbasin also provides the irrigation water for Solano County's agriculture; exactly how much of the Subbasin water is used for irrigation is not known. Per the requirements of the SGMA, local water sustainability agencies are now working on plans to measure and more closely monitor groundwater use, and to ensure that they are drawn from sustainably. The City of Dixon participates in the Solano Basin Groundwater Sustainability Agency, which developed the Solano Basin Groundwater Sustainability Plan (GSP)adopted in April 2022.

The Solano Subbasin GSA Collaborative developed the 2022 Solano Subbasin GSP to ensure the sustainable management of the region's groundwater and to fulfill the requirements of the Sustainable Groundwater Management Act. Projects and management actions in the GSP include developing outreach materials and incentives for municipal and industrial water users to increase water-use efficiency; evaluating the use of specific managed aquifer recharge activities on local farms; developing a program to incentivize voluntary participants to reduce water consumption; monitoring Solano Subbasin conditions; providing groundwater education to the community; and expanding the use of recycled water.

LOCAL PLANTS AND ANIMALS

Dixon is located within the Pacific Flyway, a major migratory route for birds, with millions of ducks and geese flying through the area each year. As shown in Figure NE-3, Dixon is also home to several native species of plants and animals that are classified by the Environmental Protection Agency or by the California Department of Fish and Wildlife as rare or threatened, called special-status species.

The adobe-lily, a rare pink wildflower that blooms in early spring, has been found around downtown Dixon.

The burrowing owl, a yellow-eyed diurnal owl about the size of a robin, has had rapidly declining populations throughout California in the past few decades, but has been

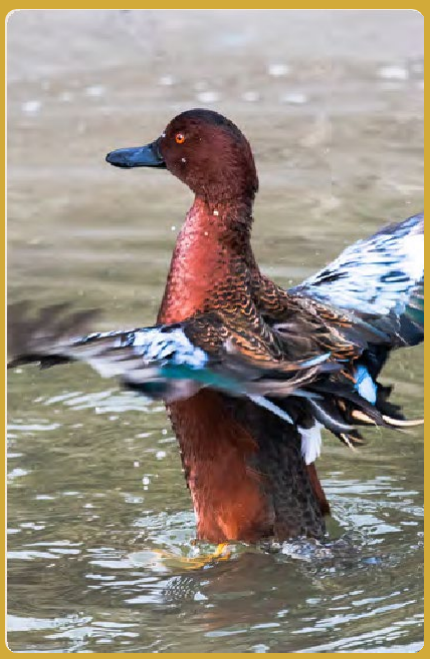
spotted burrowing in and around the planning area.

Swainson's Hawk, a mid-sized raptor listed as Threatened by the State of California, typically eats insects and small rodents from grasslands and fields; while they have declined in their typical nesting areas in California, Swainson's hawks have been seen throughout the planning area.

The valley elderberry longhorn beetle, which depends on riparian elderberry plants for food, and the vernal pool fairy shrimp, a tiny, almost transparent shrimp with eggs that lie dormant until vernal pools return the next spring, are both federally listed as Threatened and live in and around the planning area.

Several other rare, threatened, or endangered species have been seen near Dixon, Davis, or Vacaville, and may occur within the planning area: plants, including alkali milk-vetch, California alkalai grass, Baker's navarretia, Ferris' milk-vetch, legenere, and two-fork clover; shrimp, including California linderiella, vernal pool tadpole shrimp, and midvalley fairy shrimp; insects, including Sacramento Valley tiger beetle, western bumblebee, Antioch multilid wasps, and Crotch bumblebee; and animals, including the western snowy plover, American badger, tricolored blackbirds, grasshopper sparrows, giant garter snakes, hoary bat, the pallid bat, the silver-haired bat, the western pond turtle, western yellow-billed cuckoo, and white-tailed kite.

As development occurs, these important local flora and fauna can be disturbed and displaced. Regulations and protections from the California Department of Fish and Wildlife, the California Wildlife Conservation Board, and this General Plan guide new development to ensure that local plants and animals continue to flourish around Dixon.

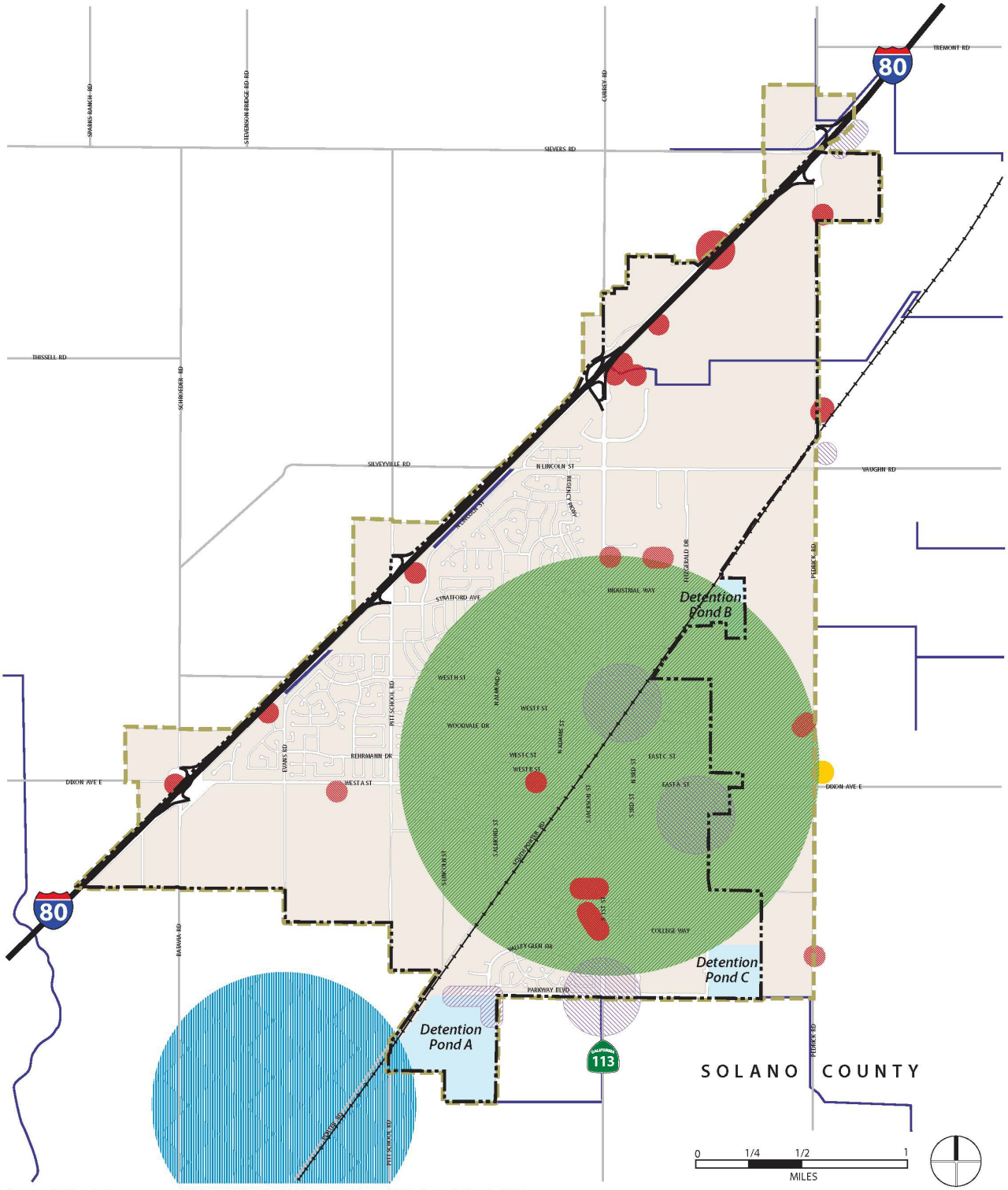


A cinnamon teal. Photo by Bobby Vogt.

THE PACIFIC FLYWAY

Dixon sits within the Pacific Flyway migratory route. At least a billion birds migrate along the Pacific Flyway each year, including snow geese, pintail ducks, coots, curlews, ibis, teals, and sandhill cranes. The Sacramento Valley hosts an estimated 44 percent of waterfowl using the Pacific Flyway; more than 1.5 million ducks and 750,000 geese show up in the winter months. The birds fly down from Alaska, Canada, and even Siberia for California's mild winter climates. They depend on wetlands for food and habitat as they pass through the area, flocking to protected local marshes, tidal waterways, and flooded rice fields.

Figure NE-3 Special Status Species Occurrence in Dixon



Source: California Department of Fish and Wildlife, 2019, City of Dixon, 2019; Dyett & Bhatia, 2019.

- Adobe-Lily
- Burrowing Owl
- Swainsons Hawk
- Valley Elderberry Longhorn Beetle
- Vernal Pool Fairy Shrimp
- Detention Basin
- Canal/Stream
- Railroad
- Dixon City Limit
- Sphere of Influence

The area of occurence indicates an area in which a species has been know to occur.

Disclaimer: Information presented in this map is based on data from CNDDB version 08/2019. Areas of occurence on this map represent areas in which known locations of the species have been found as of the date of this version. There may be additional occurences of additional species within this area which have not yet been surveyed and/pr mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area.

Table NE-1: Rare Plants and Animals Found In and Around Dixon

Species	Common Name	Federal Status	California Status
Fritillaria pluriflora	Adobe-lily	None	None
Athene cunicularia	Burrowing owl	None	None
Buteo swainsoni	Swainson's hawk	None	Threatened
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	Threatened	None
Branchinecta lynchi	Vernal pool fairy shrimp	Threatened	None

Source: California Natural Diversity Database (CNDDB), 2019.

Trees in parks, along streets, and on private property throughout Dixon comprise a local tree canopy that plays a vital role in the health of the natural environment, regulating temperature, improving air quality, and managing rainwater. They also provide habitat for both native and migratory birds. Most homes in Dixon have at least one tree on the property; many have several.

Dixon's parks, including Hall Memorial Park, Northwest Park, and the Women's Improvement Club Park, have dense, mature tree canopies that benefit the whole city. And the City of Dixon, as part of the Dixon Lighting and Landscaping District, maintains over 1,600 street trees. About three quarters of these trees, however, are of just five species: crepe myrtle, redwood, sycamore, Chanticleer pear, and non-fruiting plum. Dixon's 2012 Urban Forest Master Plan (UFMP) calls for diversifying the street trees to include a wider variety of species; the City's recommended street tree list contains a variety of species well-adapted to local conditions, including hawthorn, maple, hornbeam, ash, oak, gingko, and linden trees. Beautiful specimens of these tree types exist throughout Dixon, and the UFMP contains actions and policies that prioritize planting more trees of various species. The City Engineer of the Public Works Department plants, maintains, and regulates street trees within Dixon; regular maintenance and care preserves existing trees and helps critical new trees develop strong roots for long lives. As established by the UFMP, tree planting in new developments should be approved by the Public Works Administrator to ensure that enough trees of enough different species will be planted.

Expanding and protecting the tree canopy throughout the City with well-suited, drought-tolerant trees, planted and cared for by the City and by local residents, makes Dixon more hospitable for humans and animals alike.

GOAL NE-1: Preserve, protect, and enhance natural resources, habitats, and watersheds in Dixon and the surrounding area, promoting responsible management practices.

AGRICULTURAL LAND AND NATURAL OPEN SPACE CONSERVATION

POLICIES

NE-1.1 Preserve the natural open space and agricultural lands that surround Dixon through continued leadership in cross-jurisdictional conservation initiatives such as the Vacaville-Dixon Greenbelt and the Davis-Dixon greenbelt.

NE-1.2 Support regional efforts to place additional land under permanent conservation easements and continue to use the Agricultural Land Mitigation Fund to collect development impact fees for the purpose of funding greenbelt expansion.

NE-1.3 Encourage open space preservation through easements, open space designation, or dedication of lands for the purpose of connecting conservation areas, protecting biodiversity, accommodating wildlife movement, and sustaining ecosystems.

NE-1.4 Prior to annexing land into the city or expanding the SOI, continue to require agricultural mitigation consistent with the Solano County Local Agency Formation Commission's Standards and Procedures when agricultural lands would be converted to nonagricultural purposes.

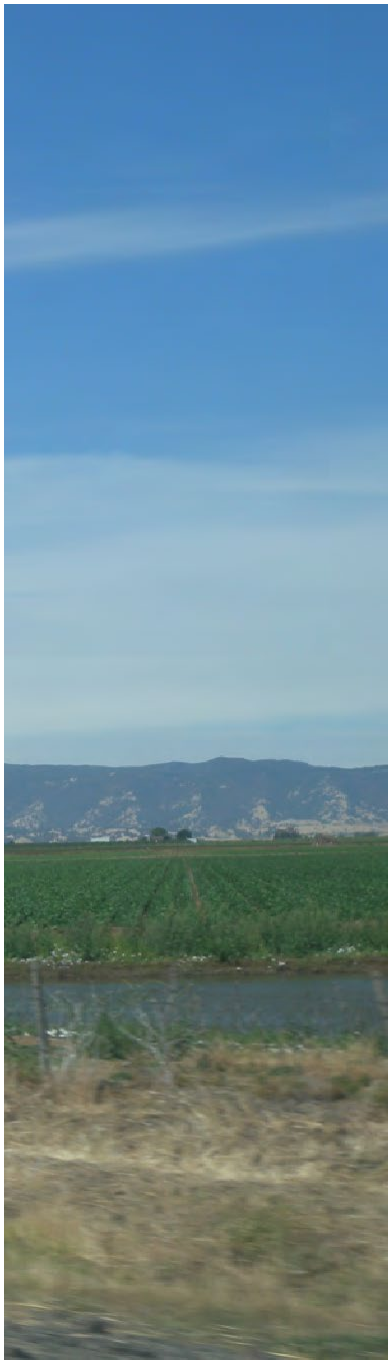
NE-1.5 Continue to allow agriculture as an interim use on land within the City that is designated for future urban use.

NE-1.**6** Support pest and disease management efforts of the Solano County Department of Agriculture, University of California Cooperative Extension, Resource Conservation District, and private landowners to reduce risk and harm to residents, businesses, and visitors.

ACTIONS

NE-1.A Adopt a Right to Farm ordinance that protects the rights of agricultural operations in areas adjacent to the City to continue operations and seeks to minimize conflicts with adjacent urban uses in Dixon.

NE-1.B Support the establishment of projects to teach Dixon residents about the agricultural industry and to provide a forum for dialogue between Dixon residents and farmers. Incorporate hands-on learning opportunities that present information in a manner that will increase interest in agriculture and the natural environment.



NE-1.C Collaborate with landowners, neighbors, the school district, and others, to create a program that establishes and maintains landscaping, school gardens, or community gardens on vacant or idle sites within the City.

(Policies and actions related to growth management and compact development in the Land Use and Community Character Element also offer co-benefits for open space agricultural land conservation).

WATER RESOURCES

POLICIES

NE-1.7 Recognize the Sacramento Valley - Solano Groundwater Subbasin as a critical resource for Dixon and proactively promote sustainable groundwater management practices.

NE-1.8 Continue to work with the Solano Subbasin Groundwater Sustainability Agency Collaborative to develop and implement strategies for the long-term health and viability of the Solano Groundwater Subbasin.

NE-1.9 Facilitate groundwater recharge in Dixon by encouraging development projects to use Low-Impact Development (LID) practices such as bioretention, porous paving, and green roofs, and by encouraging private property owners to design or retrofit landscaped or impervious areas to better capture storm water runoff.

NE-1.10 Work with the Dixon Resource Conservation District to ensure that drainage ditches which discharge directly to or are located within open space lands are regularly repaired and maintained.

ACTIONS

NE-1.D Pursue funding from the Sustainable Groundwater Management Grant Program and other sources for investments in groundwater recharge and implementation of the Solano Basin Groundwater Sustainability Plan.

(Policies and actions related to stormwater management in the Public Facilities and Services Element also offer co-benefits for groundwater recharge and conservation).

WILDLIFE AND HABITATS

POLICIES

NE-1.11 Support regional habitat conservation efforts, including implementation of the Solano Countywide Multispecies Habitat Conservation Plan.

NE-1.12 Ensure that adverse impacts on sensitive biological resources, including special-status species, sensitive natural communities, sensitive habitat, and wetlands are avoided or mitigated to the greatest extent feasible as development takes place.

NE-1.13 In areas where development (including trails or other improvements) has the potential for adverse effects on special-status species, require project proponents to submit a study conducted by a qualified professional that identifies the presence or absence of special-status species at the proposed development site. If special-status species are determined by the City to be present, require incorporation of appropriate mitigation measures as part of the proposed development prior to final approval.

NE-1.14 Protect the nests of raptors and other birds when in active use, as required by State and federal regulations. In new development, avoid disturbance to and loss of bird nests in active use by scheduling vegetation removal and new construction during the non- nesting season or by conducting a pre-construction survey by a qualified biologist to confirm nests are absent or to define appropriate buffers until any young have successfully fledged the nest.

NE-1.15 Recognize the importance of the urban forest to the natural environment in Dixon and expand the tree canopy on public and private property throughout the community.

NE-1.16 Enhance tree health and the appearance of streets and other public spaces through regular maintenance as well as tree and landscape planting and care of the existing canopy.

NE-1.17 Minimize removal of, and damage to, trees due to construction-related activities and continue to require replacement of trees, including street trees lost to new development.

NE-1.18 Require new development to provide and maintain street trees suitable to local climatic conditions.

ACTIONS

NE-1.E Maintain a list of tree species well-adapted to local conditions and provide this information to local property owners, businesses, and developers.

NE-1.F Explore establishing a tree planting and maintenance program in partnership with local community groups or non-profit organizations.

NE-1.G Provide on-going education for local residents, businesses, and developers regarding landscape, maintenance and irrigation practices that protect the urban forest and wildlife species.

2.3 ENERGY AND WATER CONSERVATION

Water is a precious resource, particularly in the Central Valley where groundwater overdraft and rising average annual daily temperatures continually strain availability. Energy too is indispensable to our daily lives, and our energy choices impact the natural systems around us in many ways. Responsible management of energy and water will be critical if Dixon is to thrive. Individual residents, businesses, and developers all have a role to play in the conservation of local resources.

A drought is an extended period when precipitation levels are well below normal. Droughts are a normal part of the climate cycle, but they may cause losses to agriculture; affect domestic water supply, energy production, public health, and wildlife; and contribute to wildfire. Like most of California and the western United States, Dixon chronically experiences drought cycles. Major droughts affecting Solano County occurred 1896 to 1900, 1975 to 1977, 1991, 2004, 2006 to 2009, 2011 to 2016, and 2022.

Although droughts are a regular feature of California's climate, scientists expect that climate change will lead to more frequent and intense droughts compared to historical conditions. Climate change is likely to cause fewer, more intense precipitation events that result in less water percolating into the groundwater basin, decreasing groundwater levels. However, the Solano Subbasin GSP suggests that the overall annual change in storage will remain stable.

To address drought conditions, Cal Water and the City of Dixon have developed water shortage contingency plans in their urban water management plans to address potential water shortage conditions by reducing demands and further ensuring supply reliability. Measures include limiting irrigation, expanding rebates for water efficiency, increasing water waste enforcement, and implementing a drought rate structure and customer water budgets. Dixon also adopted the State's Model Water-Efficient Landscape Ordinance into the Dixon Municipal Code, requiring all vegetation and landscaping mandated by the zoning regulations to employ low water use species.

Higher air temperatures due to climate change are expected to increase evapotranspiration, causing more water to be needed by surrounding agriculture and exacerbating drought conditions in the Solano Subbasin. Climate strongly influences the level and seasonal pattern of local water demands. Climate change may increase future water demands by 2 to 3 percent compared to current climate conditions, though there may be significant year-to-year variation.

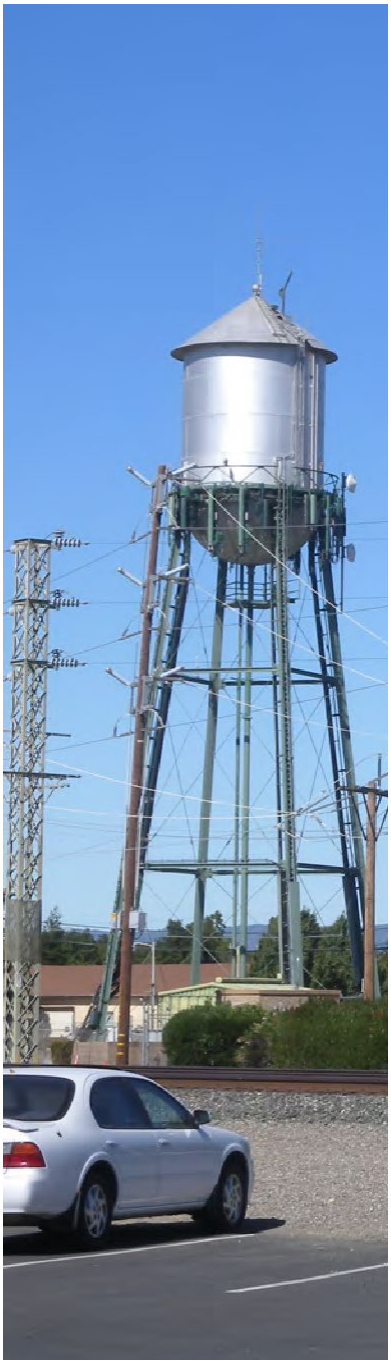
Water Conservation

In Dixon's hot climate and rainless summers, using low-water plants throughout the city can save thousands of gallons of fresh water per year and reduce demand on the groundwater. Greywater systems, which reuse water from showers, sinks, and laundry, can get multiple uses out of a single gallon of water, and are becoming more common in both new multi-family buildings and as retrofits in single family homes. Rainwater harvesting can save water for a rainless day: barrel storage can keep water ready for landscaping irrigation in the dry summer months and can also help residents be prepared for emergencies. And making sure that water can infiltrate into the aquifer keeps the groundwater supply abundant: as water seeps into the ground, it gets filtered by soils and rock, and gets naturally stored underground until the city pulls it up as drinking water. Cal Water and the City of Dixon are responsible for encouraging water conservation within Dixon.

This Element also includes several policies to encourage sustainable, low-impact development measures for capturing and treating stormwater on-site, for promoting rainwater reuse and low- pesticide practices in landscaping, and for promoting use of greywater, rainwater, and recycled water throughout Dixon.

Energy Conservation

Residents and businesses can save energy and money by installing energy efficient upgrades—there are many local, state-wide, and PG&E programs to help defray costs. Higher efficiency heating and cooling systems, building insulation, hot water systems, duct sealing, efficient windows, and many other improvements are eligible for rebates through various state and local agencies. Policies within the new General Plan will help Dixon residents access these programs, reducing the City's overall energy consumption.



GOAL NE-2: Use energy and water wisely and promote reduced consumption.

POLICIES

NE-2.1 Promote energy conservation throughout the community and encourage the use of renewable energy systems to supplement or replace traditional building energy systems.

NE-2.2 Implement energy and water conservation measures in City facilities and operations.

NE-2.3 Participate in regional energy efficiency financing programs such as low-interest revolving loan funds, the California Comprehensive Residential Building Retrofit Program, California First, and the Property Assessed Clean Energy (PACE) program that enable property owners to obtain low-interest financing for energy improvements.

NE-2.4 Encourage the retention and reuse of rainwater onsite and promote the use of rain barrels or other rainwater reuse or green infrastructure systems throughout the community.

NE-2.5 Encourage new development to optimize water efficiency measures and conservation practices in their design and construction.

NE-2.6 Promote the use of water-efficient landscaping on existing private property.

NE-2.7 Conserve water through the provision of water-efficient infrastructure, drought tolerant plantings, and greywater usage to support public parks and landscaped areas.

NE-2.8 Conserve water through the planting and maintenance of trees, which will provide for the capture of precipitation and runoff to recharge groundwater, in addition to providing shading for other landscaping to reduce irrigation requirements. Ensure that any 'community greening' projects utilize water-efficient landscape.

NE-2.9 Collaborate with the Solano County Water Agency to implement water conservation measures and ensure sustainable water supplies.

NE-2.10 Partner with Solano County Water Agency to conduct public education and outreach to Dixon residents and businesses about water-use efficiency.

NE-2.11 Work with the agricultural community to experiment with low water use agricultural techniques.

ACTIONS

NE-2.A Connect businesses and residents with voluntary programs that provide free or low-cost energy efficiency audits, retrofit installations, rebates, financing, and contractors by publishing information on the City's website and through other digital, print, or in-person opportunities as feasible .

NE-2.B Explore establishing a rebate program to promote the installation of renewable energy production systems including photovoltaics, energy storage, and other appropriate technologies.

NE-2.C Continue to provide water customers with information on conservation techniques, services, devices, and rebates by publishing information on the City's website and distributing flyers.

NE-2.D Update the Municipal Code to allow the use of greywater and rainwater catchment systems for all structures.

NE-2.E Update the Urban Water Management Plan and Water Shortage Contingency Plan every five years in accordance with Department of Water Resources standards and water conservation best practices.

NE-2.F Coordinate with the Solano County Water Agency and conduct public education and outreach about water-use efficiency to Dixon residents and businesses.

2.4 WASTE REDUCTION

The California Department of Resources Recycling and Recovery (CalRecycle) estimates that residences and businesses in Dixon generate about 17,800 tons of landfill waste per year. While the community is meeting statewide targets for reducing waste, per-capita waste has been rising over the last decade, from a low of about 3.7 pounds per person per day in 2011 to about 5.0 pounds per person per day in 2017.

Solid waste generated in Dixon goes to Hay Road Landfill, eight miles to the south. The City is getting more sophisticated with ways to safely divert waste from the landfill and has added eleven new waste diversion programs since 1995. Various types of paper, including cardboard, office paper, and newspaper, are the largest waste category in Dixon after food waste, at over 2,600 tons per year, but most of this paper is currently being recycled and diverted from landfills. The city is also looking at ways to increase recycling throughout Dixon by installing more recycling receptacles in public places. Hazardous materials like fluorescent lightbulbs, pesticides, and medications, prohibited from being disposed of in trash or recycling containers since they can leech toxic chemicals into the soil and ultimately into the groundwater, are accepted at Recology's Vacaville Household Hazardous Waste Drop Off location. Recology, which is under contract through the City, also provides curbside recycling pick-up and a recycling drop-off location at the intersection of 1st Street and C Street.

Dixon also contracts Recology to collect yard waste weekly but doesn't currently offer food-scrap composting. Food scraps make up a large part of the waste that goes into the Hay Road Landfill. CalRecycle estimates Dixon households and businesses generate about 2,800 tons of food waste per year, which makes up about 16 percent of the landfill-bound waste stream. Composting programs could keep food scraps out of landfills and turn them into productive material that sequesters greenhouse gases and helps gardens grow, a win-win solution in an agricultural town like Dixon. There are different scales of composting – home composters can turn most fruit, vegetable, and garden scraps into rich soils, while industrial-scale comporting can handle most organic materials, including meats, oils, and bones. Many California communities are now offering industrial compost collection along with regular recycling and garbage pick-up. As part of the General Plan, the City will consider how to increase waste diversion from landfills: offering citywide composting would make composting easy and accessible for Dixon residents; the City could also help residents install their own backyard composting through incentives or equipment giveaways.

Beyond composting and recycling, reuse of goods is one of the most environmentally sound ways to keep waste out of landfills. Textiles currently make up about 5 percent of household landfill waste, but reusing them, by donating to local thrift stores or selling them at a city-wide garage sale, would divert waste and give the clothing a second life. About 14 percent of Dixon's commercial waste is some type of

construction material; finding ways to reuse these materials in constructing other structures reduces both waste and costs.

GOAL NE-3: Optimize the use of available resources by encouraging residents, businesses, and visitors to reuse and recycle.

POLICIES

NE-3.1 Promote reduction of solid waste production throughout Dixon and expand the range of programs and information available to local residents and businesses.

NE-3.2 Ensure that 75 percent of solid waste generated be reduced at source, recycled, or composted by the year 2020 and beyond, per AB 341.

NE-3.3 Continue to promote the safe disposal of household hazardous waste through public education.

NE-3.4 Provide information via the City's website on curbside pick-up of donations by local organizations such as Goodwill, Salvation Army, Vietnam Veterans of America, and Youth Industries.

ACTIONS

NE-3.A Provide recycling receptacles in parks and public spaces, in addition to trash receptacles.

NE-3.B Consider expanding compost collection services to residential customers in Dixon or implementing a backyard composting program for local residents.

NE-3.C Work with commercial and industrial generators to develop and implement a source reduction and recycling plan tailored to their individual waste streams.

NE-3.D Adopt a construction and demolition diversion ordinance based on the CalRecycle model ordinance to require diversion of construction and demotion debris as needed to meet State mandates.

NE-3.E Collaborate with Dixon homeowners associations and other community groups to establish a citywide event such as a garage sale day or goods exchange.

2.5 COMMUNITY RESILIENCE

HAZARDS

Geologic and Seismic Hazards

Like much of California, Dixon is located in a seismically active region. While there are no known active faults within Dixon, there are faults nearby, as shown in Figure NE-4 that could s2ubject the community to ground shaking and seismic hazards, which has periodically occurred in the past. In April 1892, a Magnitude 6.0 earthquake struck to the northwest of the city, followed by a Magnitude 5.6 quake to the southeast several days later.

As shown in Figure NE-5, the Dixon area has some risk of seismic activity leading to liquefaction, which causes soils to behave like liquids and lose stability, causing damage to buildings and infrastructure. Most of Dixon is classified as having a moderate risk of liquefaction; however, a portion of the city is in a high- risk area, and a few narrow channels of "very high" susceptibility run through the planning area, likely reflecting historically filled creek beds. These areas fall along the eastern border of the city and are primarily overlain by relatively low-density industrial land. However, some residential areas south of West A Street are underlain by soils with moderate liquefaction potential.

Earthquakes could also increase the risk of dam failure at nearby Monticello Dam, which could inundate the entire Dixon area as well as surrounding communities.

Landslides usually occur on slopes with loose or fragmented soil. Because the Dixon area has a generally flat topography, it has limited potential for landslides. However, areas of moderate landslide risk occur primarily near the center of the city, as shown in Figure NE-6 and have both industrial and residential development.

Soil erosion is the process by which soil materials are worn away and transported to another area, either by wind or water. Stormwater drainage and wind cause the highest levels of erosion in Dixon. Since Dixon is primarily flat and has no natural waterways, the risk of soil erosion due to water runoff is low.

Expansive soils have shrink-swell potential, meaning that they may swell when wet and shrink when dry. Expansive soils can be hazardous to structures and may cause cracks in building foundations, distortion of structural elements, and warping of doors and windows. The soils underlying Dixon range from low to high shrink-swell potential, with the highest-potential soil in the northern tip of the city.

Land subsidence is the sinking of a large area of ground surface with little or no horizontal movement. Subsidence areas are associated with groundwater or natural gas extraction, but subsidence can also result from seismic activity. Subsidence appears to have occurred historically in an area stretching from central Colusa County to Dixon in Solano County, primarily due to groundwater withdrawal. In 2018, Dixon joined Solano County's Joint Groundwater Sustainability Agency, which monitors groundwater conditions, including potential for subsidence. There is currently no documented subsidence due to groundwater pumping in the Solano Subbasin.

The City of Dixon's Municipal Code contains several provisions for mitigating risk pertaining to seismic and geologic hazards. Chapter 16 adopts the California Building Code, which regulates seismic design, the excavation of foundations and retaining walls, analysis of slope instability, requirements for drainage and grading, and other aspects of building design and construction that relate to geology, soils, and seismicity. Chapter 17 of the Municipal Code, Subdivision Standards, requires that soils reports, seismic analysis, bank stabilization, and other factors pertinent to the project site be provided as part of the application for a tentative subdivision map unless the city engineer determines that no preliminary analysis is necessary.

Climate change is generally not anticipated to have a direct impact on seismic hazards. However, climate change may result in precipitation extremes that could cause an increase in the number of landslides or make landslides in drainage areas larger than normal. The combination of a generally drier climate and the occasional extreme downpour is likely to cause more landslides.

Flood Hazards

Flooding is the rising and overflowing of a body of water onto normally dry land. A few areas of Dixon and the Sphere of Influence are within the Federal Emergency Management Agency (FEMA) and California Department of Water Resources (DWR) 100-year or 500-year flood hazard zones (see Figure NE-7). These areas have a 1 percent or 0.2 percent chance of flooding in any given year, respectively. These areas occur predominantly along the eastern boundary of the city, in areas with mostly industrial or government/institutional land uses and coincide closely with the locations of the City's detention basins B and C along the eastern border of the city. However, some residential areas, primarily those at the south end of the city along SR-113, Porter Street, and near Northwest Park, are also subject to flood hazards. Most of Dixon, however, is not within a flood hazard zone.

As shown in Figure NE-8, dam inundation areas occur along the southeast corner of the city and along the boundaries of the wastewater treatment plant. Dixon is also within the dam inundation area for Monticello Dam (Lake Berryessa) in Napa County. In the event of a flood or dam inundation, the Dixon Fire Department responds to life hazard situations and other public safety risks.

Chapter 9.04 of the City's Municipal Code, Flood Damage Prevention, provides requirements for reducing flood losses, including restricting or prohibiting uses that are dangerous to health and safety due to water or erosion hazards, or which result in increases in erosion or flooding. The Floodplain Management Ordinance has several provisions to reduce flood hazards, including anchoring standards, specifications for construction materials and methods, and elevation and floodproofing requirements.

Several agencies participate in flood prevention and management in and around Dixon. The Dixon Regional Watershed Joint Powers Authority—made up of the City of Dixon, Dixon Resource Conservation District, Maine Prairie Water District, and Reclamation District 2068—works to construct and operate new or upgraded drainage facilities that provide drainage to two or more of the participating entities. The Solano County Water Agency provides flood control and operates the SCWA Flood Warning System to provide up-to-date information to the community and public agencies on potential flooding in Solano County. The Dixon Resource Conservation District operates and maintains the Dixon Drain, a 70-mile-long system of ditches designed to provide water drainage, reduce duration of flooding, and diminish ponding of water on agricultural lands.

Historically, major floods have been

infrequent in Dixon. However, major flooding occurred nearby in Solano County in 1986 and during the 1996 to 1997 New Year's Day Northern California flood. The 1986 flood caused flooding along the Napa and Russian Rivers and led to levee breaks in Olivehurst and Linda. On the San Joaquin River and in the Delta, levee breaks along the Mokelumne River caused flooding in Thornton and flooded four Delta islands. The 1996 to 1997 New Year's Day Northern Flood affected the Klamath River and San Joaquin River Basin, including along the Cosumnes River and near Olivehurst, Arboga, Wilton, Manteca, and Modesto.

Climate change may exacerbate flood risk by increasing the frequency and intensity of heavy precipitation events.

Wildfire and Smoke

Structural fires pose the largest fire risk in Dixon; they occur in built-up environments, destroying buildings and other human-made structures. These types of fires are often due to faulty wiring or mechanical equipment, combustible construction materials, the absence of fire alarms and fire sprinkler systems, or human accidents, though deliberate fires (arson) may be a cause of some events. Older buildings that lack modern fire safety features may face greater risk of damage from fires.

To minimize fire damage and loss from structural fires, the City's Fire Department implements and enforces the Fire Code and Building Code, which set standards for building and construction. They require the provision of adequate water supply for firefighting, fire-retardant construction, and minimum street widths. The City's Fire Department also conducts fire prevention awareness programs and fire drills to train residents to respond quickly and correctly to reduce injury and losses during fires. The City's Fire Department is discussed in more detail in the Public Services chapter.

Structural, vehicle, trash, and other types of urban and structural fire that originate within built-up areas will likely continue to occur periodically within Dixon. The spread of these fires can be exacerbated by high temperatures, high winds, and low humidity.

Most of Dixon is classified as having no to moderate wildfire threat. The more developed portions of the city generally have a moderate risk, and surrounding areas have low risk. As can be seen in Figure NE-9, the areas with greatest fire risk in Dixon are associated with the Wildland Urban Interface areas are scattered throughout the city, but those posing the greatest fire threat are near the eastern boundary of the city between Industrial Way and H Street. The land surrounding the city is primarily cultivated agriculture land, which can provide protection from wildfire.

The California Department of Forestry and Fire Protection (CAL FIRE) establishes Fire Hazard Severity Zones (FHSZs), designating each as moderate, high, or very high. Incorporated areas such as Dixon are considered local responsibility areas (LRAs). CAL FIRE only designates very high FHSZs within LRAs, and Dixon does not have land designated as a very high FHSZ. High and very high fire FHSZs occur west and southwest of Dixon along the western boundary of Solano County, as shown in Figure NE-10.

Dixon's energy delivery system is vulnerable to wildfire hazards. Wildfires can damage or destroy energy delivery infrastructure (even if not located in Dixon), which can cause power outages that can last for days or weeks, depending on the severity of the event. This can directly harm the economy, government operations, and public safety.

The increasing frequency of regional fires has created recurring air quality degradation events due to wildfire smoke. Wildfire smoke consists of a mix of gases and fine particulate matter from burning vegetation and

materials. Fine particulate matter can travel deep into lung tissue and affect the heart and circulatory system, which may be especially harmful for children; seniors; those with preexisting respiratory and circulatory conditions; and those who spend a disproportionate amount of time outside, such as outdoor workers and individuals experiencing homelessness.

Historically, Dixon has not experienced large wildfires within the city limits. However, the city was affected by smoke from the 2018 Camp Fire and 2020 Sonoma-Lake-Napa Unit Lightning Complex Fire.

Changing climate is expected to increase the fire risk and wildfire smoke in and around Dixon. Warmer temperatures can exacerbate drought conditions, which can kill or dry out plants, creating more fuel for wildfires. Changes in wind patterns may result in more erratic fire behavior, making fires harder to contain and increasing the possibility that a fire could move into Dixon. Warmer temperatures are also expected to occur later in the year, extending the wildfire season to most or all parts of the year. Even if a significant wildfire does not occur within Dixon itself, the city will likely experience an increase in poor air quality events due to smoke from regional wildfires.

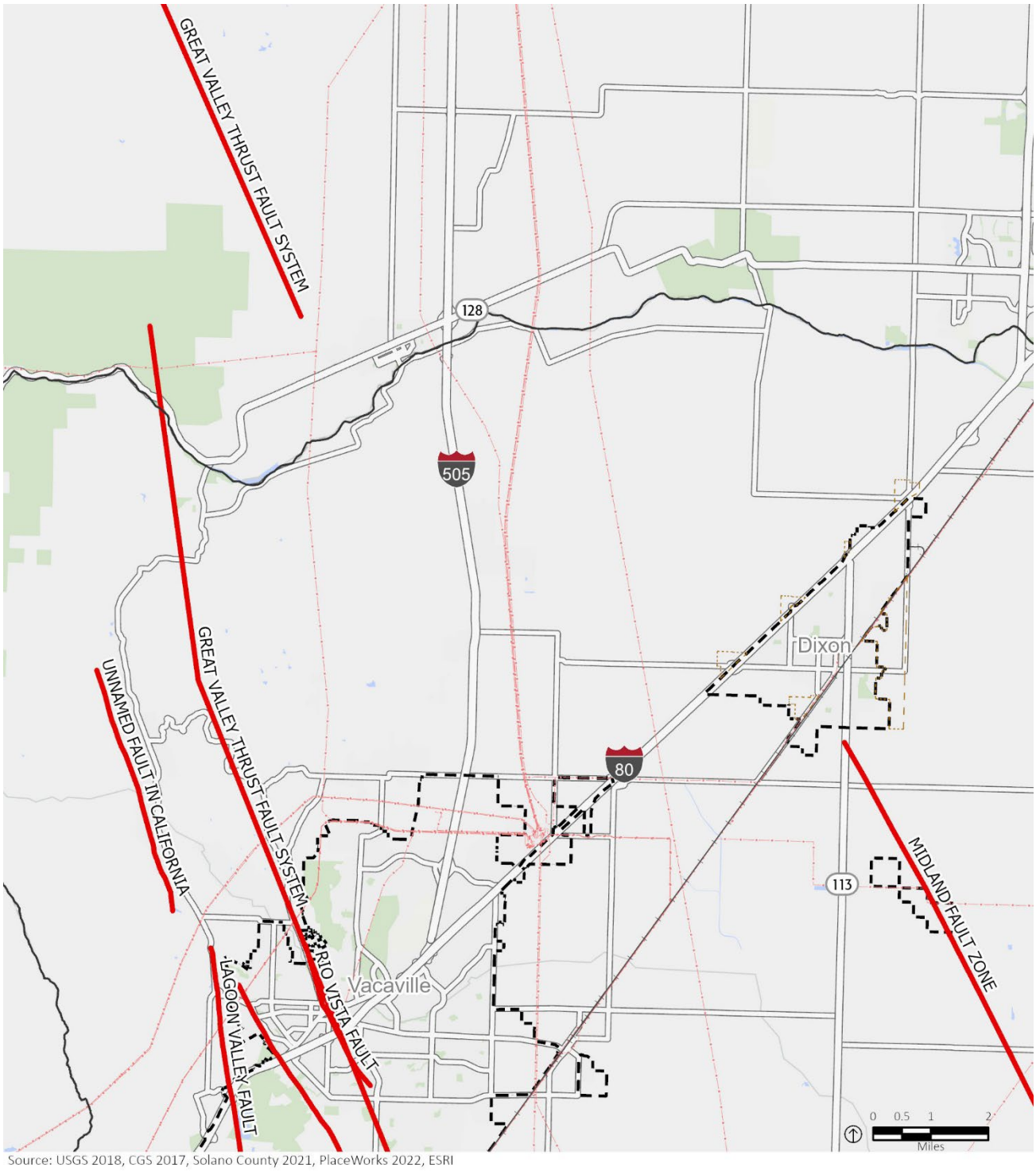
Severe Weather

Severe weather is generally any destructive weather event and can occur in the form of heavy rain, hail, thunderstorms, and strong winds. The types of dangers posed by severe weather vary widely and may include injuries or deaths, damage to buildings and structures, fallen trees, roads and railways blocked by debris, and fires sparked by lightning. Severe weather often produces high winds and lightning that can damage structures and cause power outages. Lightning from these storms can ignite wildfires and structure fires that can cause damage to buildings and endanger people. The greater Solano County area is subject to periodic extreme weather events, most frequently in the form of heavy rain, high wind, thunderstorms, and heavy fog.

Electricity utilities throughout California, including PG&E, have begun to occasionally "de-energize," or turn off the electricity for power lines that run through areas where there is an elevated fire risk. This is intended to reduce the risk of power lines sparking or being damaged and starting a wildfire. These activities, called public safety power shutoff (PSPS) events, result in a loss of power for customers served by the affected power lines. A PSPS event may occur at any time of the year, usually during high wind events and dry conditions. PSPS events may be limited to specific communities or affect broad swaths of the state. Four PSPS events in Solano County in 2019 affected more than 25,000 customers. Three PSPS events affected Solano County in 2021, the largest of which resulted in approximately 4,700 Solano County customers losing power.

While average annual rainfall may increase only slightly, climate change is expected to cause an increase in the number of years with intense levels of precipitation. This means that Dixon could see more severe weather in the coming years and decades. Heavy rainfall can increase the frequency and severity of other hazards, including flooding.

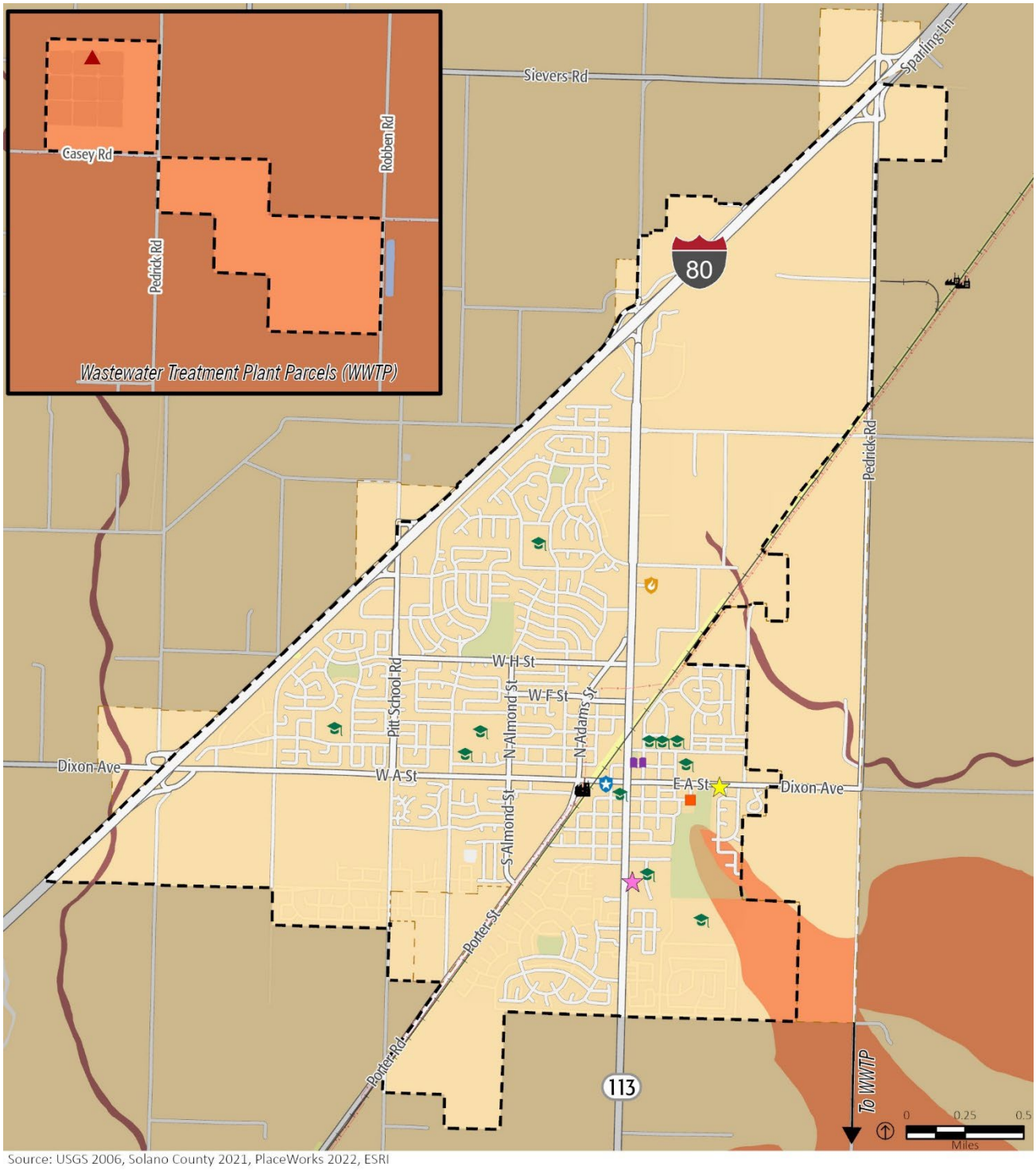
Figure NE-4 Regional Fault Lines



Source: USGS 2018, CGS 2017, Solano County 2021, PlaceWorks 2022, ESRI

- County Boundary
- City Boundary
- Sphere of Influence
- Railroad
- Transmission Lines
- Parks and Open Space
- USGS Quaternary Faults

Figure NE-5 Liquefaction Susceptibility



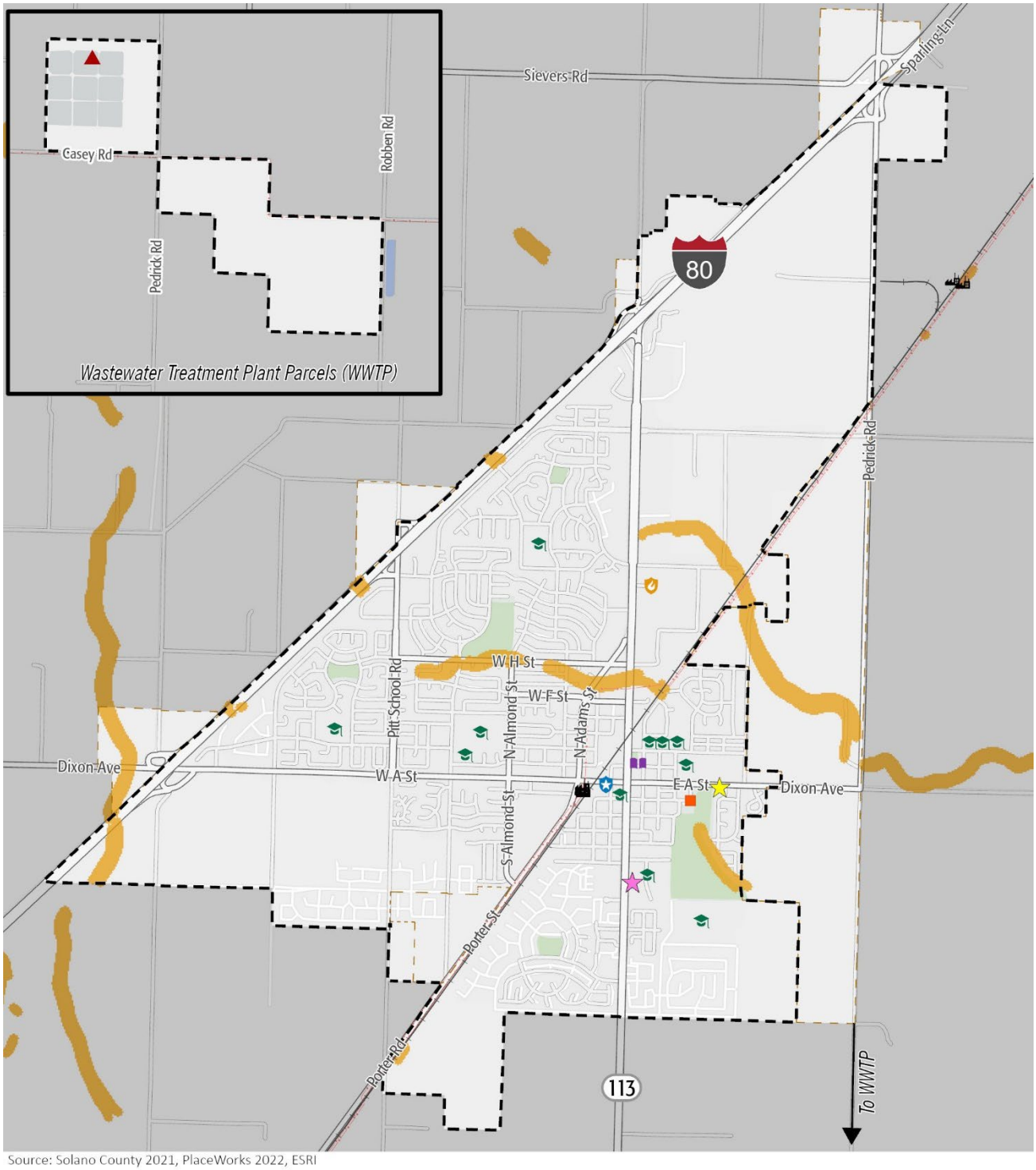
Source: USGS 2006, Solano County 2021, PlaceWorks 2022, ESRI

- City Boundary
- Sphere of Influence
- Railroad
- Transmission Lines
- Parks and Open Space

Liquefaction Susceptibility
- Very high
- High
- Moderate
- Low

- City Hall
- Community Center
- Library
- School
- Fire Station
- Police Station
- Water/Wastewater Treatment Facility
- Electrical Substation
- Dixon May Fair Grounds

Figure NE-6 Landslide Hazards



Source: Solano County 2021, PlaceWorks 2022, ESRI

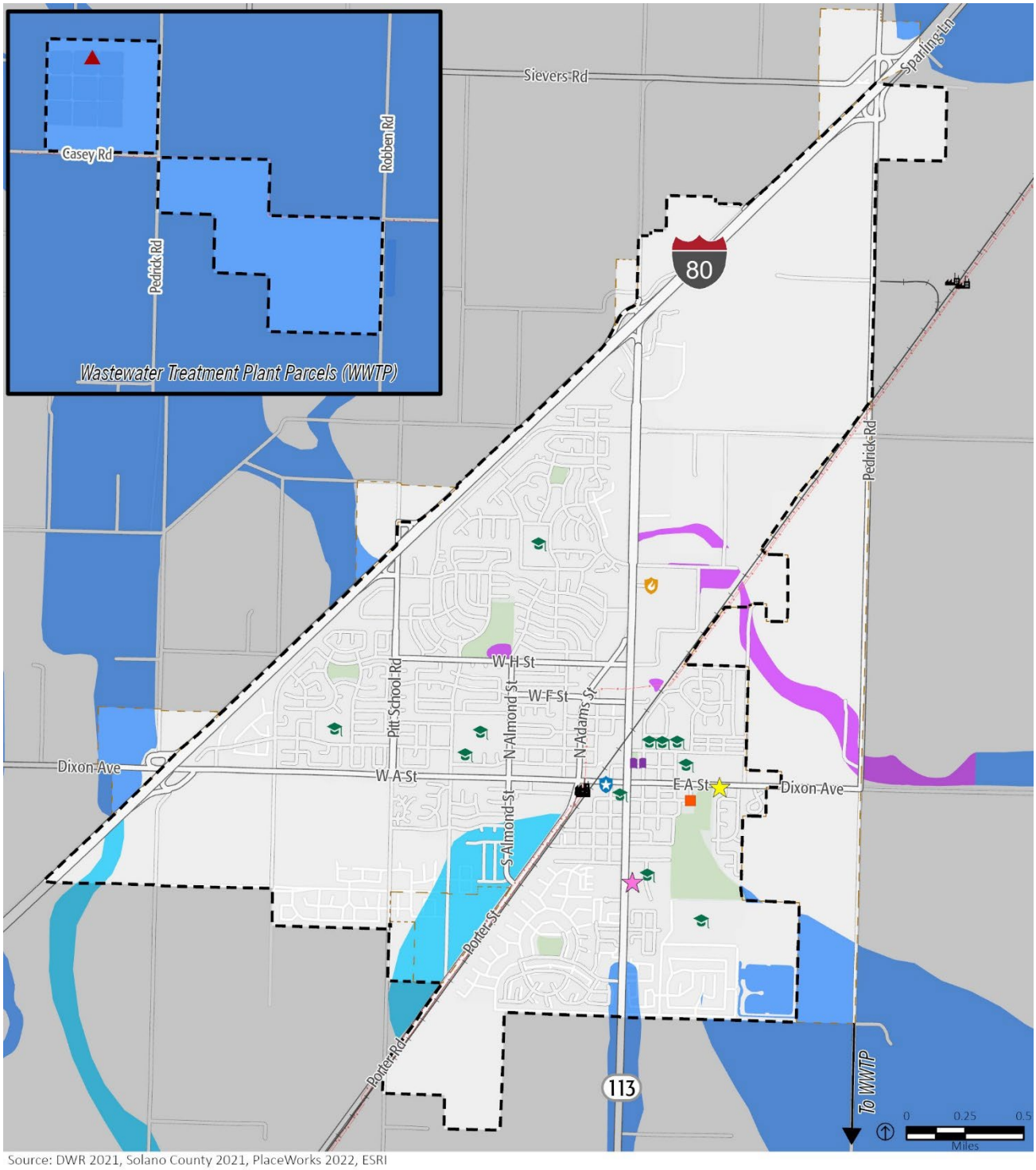
- City Boundary
- Sphere of Influence
- Railroad
- Transmission Lines
- Parks and Open Space

Landslide Hazards (Solano County MJHMP)

- Medium
- City Hall
- Community Center
- Library
- School
- Fire Station
- Police Station
- Water/Wastewater Treatment Facility
- Electrical Substation
- Dixon May Fair Grounds

0 0.25 0.5 Miles

Figure NE-7 Flood Hazard Zones



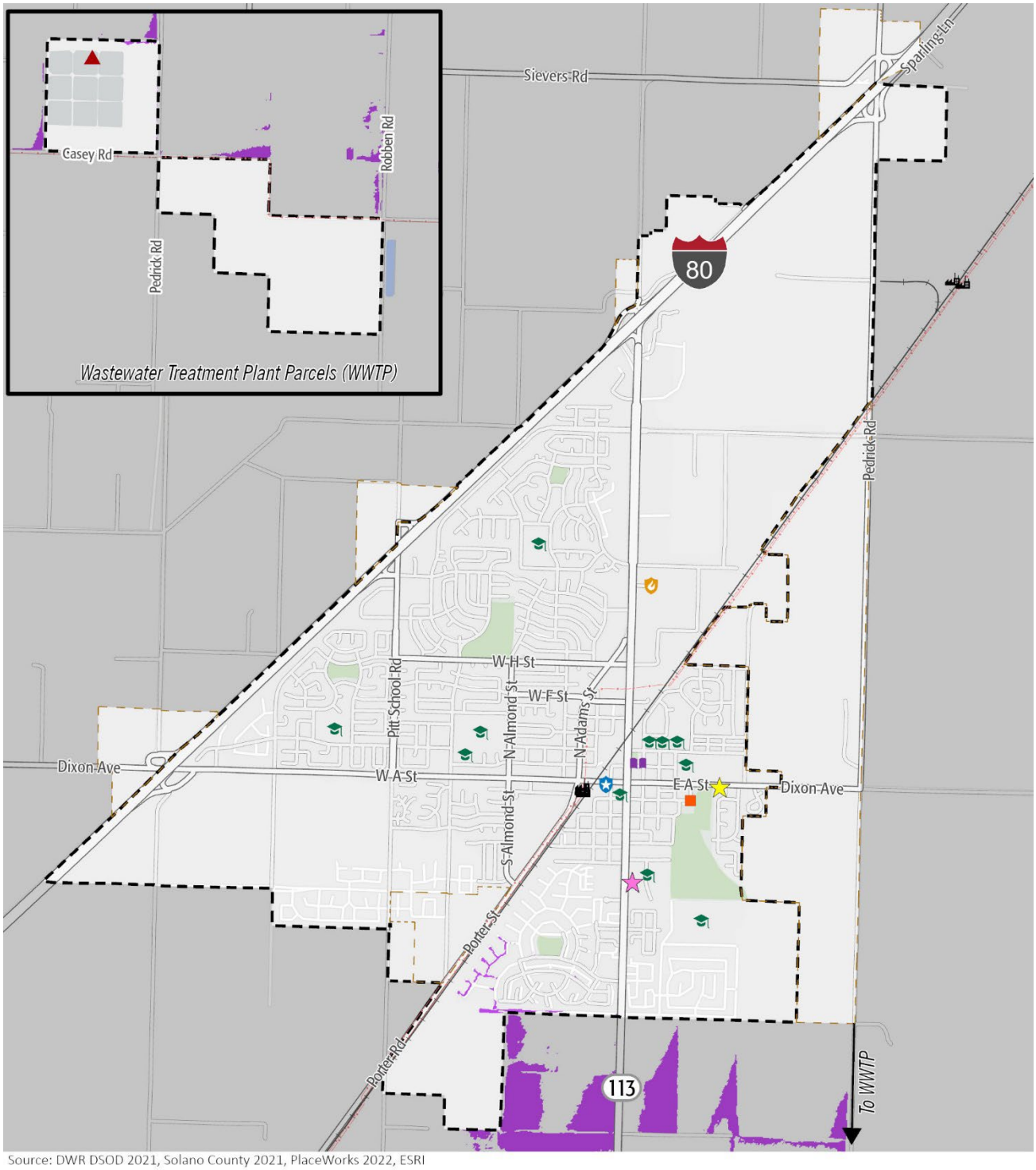
Source: DWR 2021, Solano County 2021, PlaceWorks 2022, ESRI

- City Boundary
- Sphere of Influence
- Railroad
- Transmission Lines
- Parks and Open Space
- DWR Awareness 100 Year Flood Zone

Inland Flooding (Solano County MJHMP)

- 100 year floodplain
- 500 year floodplain
- City Hall
- Community Center
- Library
- School
- Fire Station
- Police Station
- Water/Wastewater Treatment Facility
- Electrical Substation
- Dixon May Fair Grounds

Figure NE-8 Dam Inundation Zones



Source: DWR DSOD 2021, Solano County 2021, PlaceWorks 2022, ESRI

City Boundary
Sphere of Influence
Railroad
Transmission Lines
Parks and Open Space

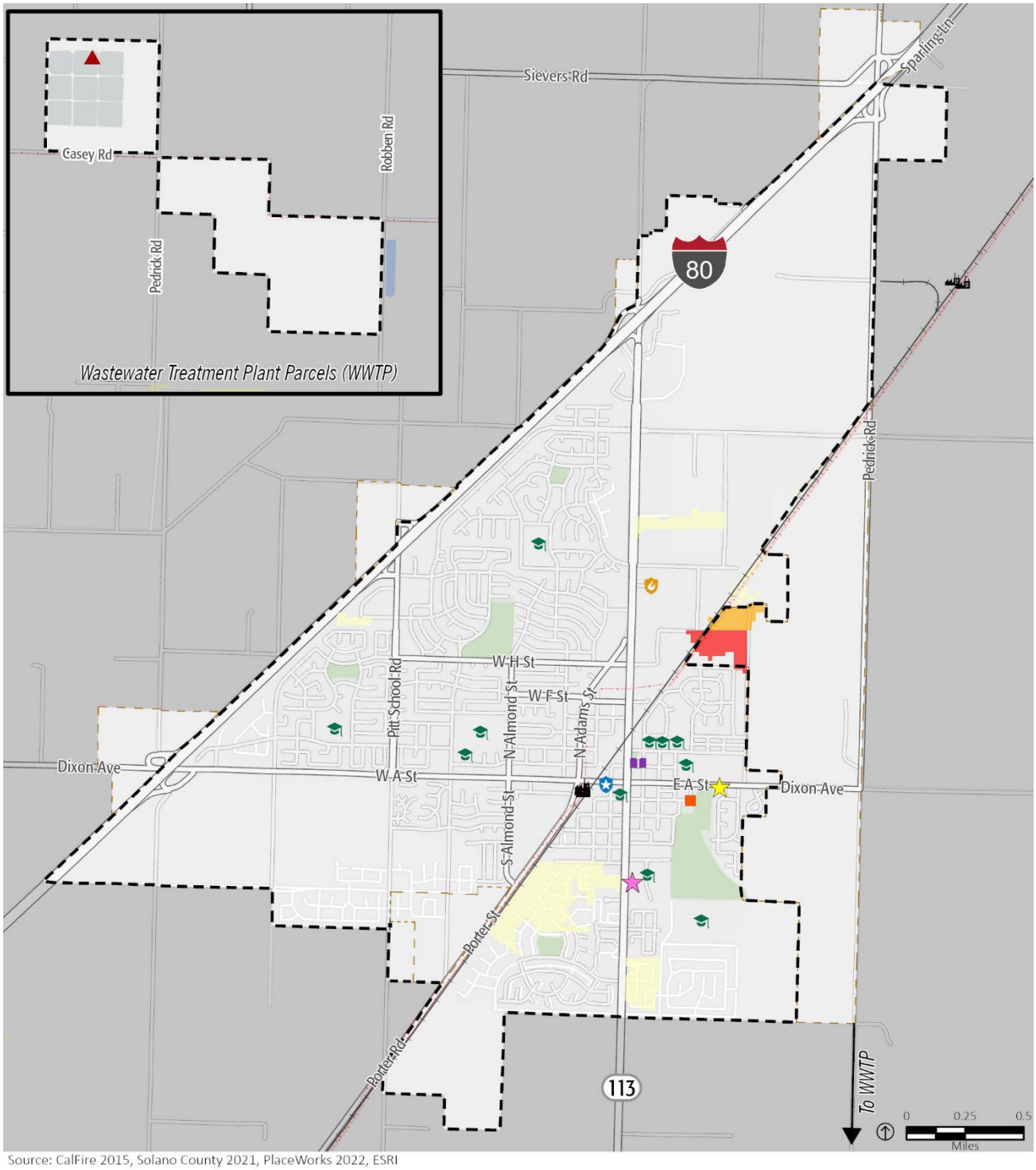
Dam Inundation Areas
Detention Pond A
City Hall
Community Center
Library

School
Fire Station
Police Station
Water/Wastewater Treatment Facility
Electrical Substation

Dixon May Fair Grounds

0 0.25 0.5
Miles

Figure NE-9 Wildland Urban Interface



Source: CalFire 2015, Solano County 2021, PlaceWorks 2022, ESRI

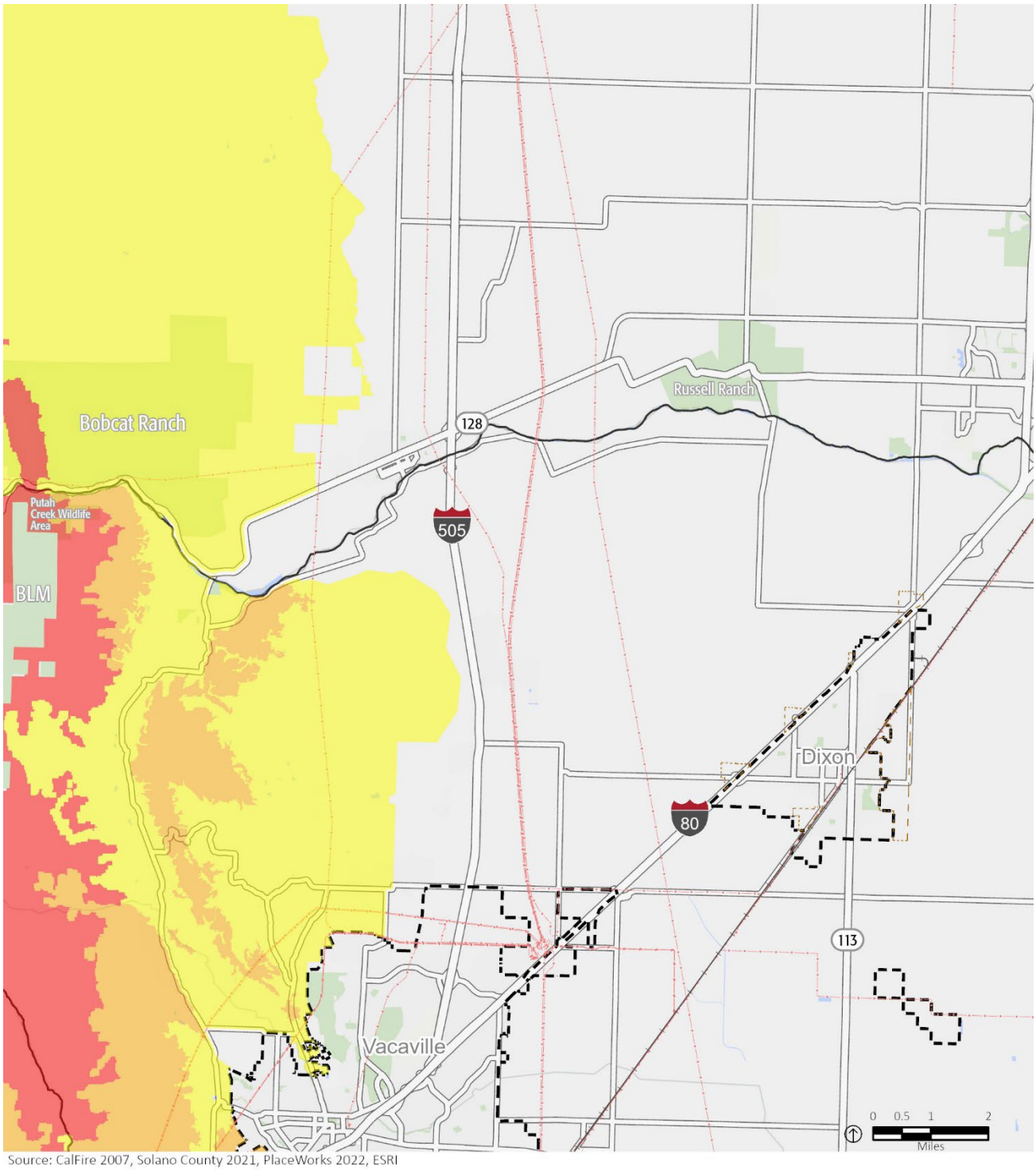
- City Boundary
- Sphere of Influence
- Railroad
- Transmission Lines
- Parks and Open Space

CalFire Wildland/Urban Interface

- Influence Zone
- Intermix Zone
- Interface Zone

- City Hall
- Community Center
- Library
- School
- Fire Station
- Police Station
- Water/Wastewater Treatment Facility
- Electrical Substation
- Dixon May Fair Grounds

Figure NE-10 Fire Hazard Severity Zones



Source: CalFire 2007, Solano County 2021, PlaceWorks 2022, ESRI

Extreme Heat

Though "extreme heat" does not have a universal definition, California guidance documents define extreme heat as temperatures that are hotter than 98 percent of the historical high temperatures for the area, as measured between April and October of 1961 to 1990. Days that reach this level are called extreme heat days. In Dixon, the extreme heat day threshold is 103.7°F. An event with five or more extreme heat days in a row is called a heat wave. Dixon experienced extended high heat events in June 2000 and June 2013, both of which resulted in incidents of heat stroke in Solano County.

As the climate warms, Cal-Adapt predicts that the average annual temperature will be 5 degrees hotter in Dixon between 2040 and 2060. Depending on the location and emissions levels, the state Cal-Adapt database indicates the number of extreme heat days is expected to rise from a historical annual average of 4 days per year to 29 days per year by the middle of the century (2035 to 2064) and to 53 days per year by the end of the century (2070 to 2099). Heat can already be dangerous in Dixon, with July temperatures often rising above 100 degrees, and hotter temperatures could present serious health risks to residents.

Extreme heat events are dangerous because people exposed to extreme heat can suffer heat-related illnesses, including heat cramps, heat exhaustion, and (most severely) heat stroke. Elderly persons, small children, persons with chronic illnesses and/or disabilities, persons experiencing homelessness, outdoor workers, and households in poverty are particularly vulnerable to extreme heat.

Extreme heat can lead to thermal expansion of railroad tracks and cause warping or buckling. This can cause train accidents, slow rail and freight services, or suspend all rail traffic. If a train accident were to occur in Dixon, the eastern portion of the city would be cut off from the other areas of the city, making evacuation more difficult during emergencies. Indirectly, extreme heat puts more stress on power lines, causing them to run less efficiently. The heat also causes more demand for electricity (usually to run air conditioning units); this demand combined with the stress on the power lines may lead to rolling blackouts.

Human Health Hazards

Human health hazards are bacteria, viruses, parasites, and other organisms that can cause diseases and illness in people. Some of these diseases may cause only mild inconvenience, but others are potentially life threatening. These diseases are often carried by animals, such as mice and rats, ticks, and mosquitos. Warmer temperatures and high levels of precipitation can lead to increased populations of disease-carrying animals, creating a greater risk of disease and increased rates of infection.

Isolated incidents of West Nile Virus and Lyme Disease have been an annual concern within Solano County. However, there are no records of recent widespread disease incidents. Increases in average temperature and changes in precipitation patterns due to climate change may facilitate the growth and activity of disease-carrying vectors. Overall risk of human health hazards is thus expected to increase.

EMERGENCY PREPAREDNESS

Resilient communities adequately plan for hazards and emergencies so that when situations occur, they can respond quickly and work together to get back on their feet. A resilient community knows that planning to ensure the safety of its most vulnerable members means that everyone will be safer when a disaster happens.

The City of Dixon Annex of the Solano County Multi-jurisdiction Hazard Mitigation Plan assesses risks to people and facilities

from natural and human-caused hazards and identifies mitigation actions to reduce or eliminate hazard risks in the city.

The Solano County Multi-jurisdictional Hazard Mitigation Plan contains a jurisdictional annex specific to hazards in Dixon. This jurisdictional annex is hereby incorporated into the Natural Environment Element by reference. The City of Dixon also has an Emergency Operations Plan, managed and updated by the Dixon Fire Department, that covers potential threats, including a major earthquake or liquefaction, fire, flood, dam failure, hazardous materials incidents, drought, terrorist incidents, and war.

The City's Emergency Operations Plan is based on the State of California's Standardized Emergency Management System and is designed to work with the rest of Solano County to quickly and effectively respond to disasters. If a major disaster occurs and a disaster declaration is declared, the County will coordinate mutual aid and response.

Other emergency resources in Dixon include the Dixon Medical Center (which includes an urgent care center), three hospitals within a ten-minute drive, eleven local churches, and the Dixon Senior/Multi-use Center. Community facilities are shown in Figure NE-11. The policies and actions below help to improve Dixon's resilience, with policies to ensure the safety of development in potentially hazardous areas and to commit City resources to maintain and update emergency plans and operations. With continued emergency preparedness, public education, and collaboration with neighboring cities, Dixon can ensure its resilience.

The Solano County Office of Emergency Services (OES) is responsible for public warning efforts during the preparedness phases of a disaster as well as the alert and notification needs during a disaster response. The County Public Information Officer is the representative within the OES staff who is responsible for public information efforts. Dixon uses "Alert Solano" to notify residents and businesses in Dixon that are impacted by or in danger of being impacted by an emergency. Alert Solano provides basic information about incidents and what specific actions are necessary to protect life and health. Alert Solano enables agencies in Solano County to provide residents with critical information quickly in a variety of situations, such as severe weather, unexpected road closures, missing persons, and evacuations of buildings or neighborhoods.

During an emergency, the Police Department is responsible for the evacuation and movement of citizens throughout Dixon. During significant evacuation emergencies, the Police Department's key functions include coordination and emergency management, public alert and warning, and traffic control. The Solano County Department of Health and Social Services is responsible for coordination support of the movement of people with access and functional needs during an evacuation emergency. If evacuation operations seem likely, the emergency operations center coordinates public safety, security, and evacuation resources.

THE HEAT ISLAND EFFECT

The "heat island effect" is an urban condition that occurs because many man-made materials, like asphalt, concrete, and brick, absorb and retain more of the sun's heat than natural elements like trees, fields, and bodies of water. This leads to urbanized areas being hotter than surrounding open space or agricultural lands, and staying hotter even after the sun goes down. Urban heat islands can exacerbate already dangerous summer temperatures and put more strain on the electricity grid through higher air conditioning use. Luckily, there are many effective strategies communities can take to reduce the heat island effect, including planting more trees in urban areas, using reflective building materials like white roofs to collect less heat, and concentrating development in already-developed areas to maintain cooling open spaces.

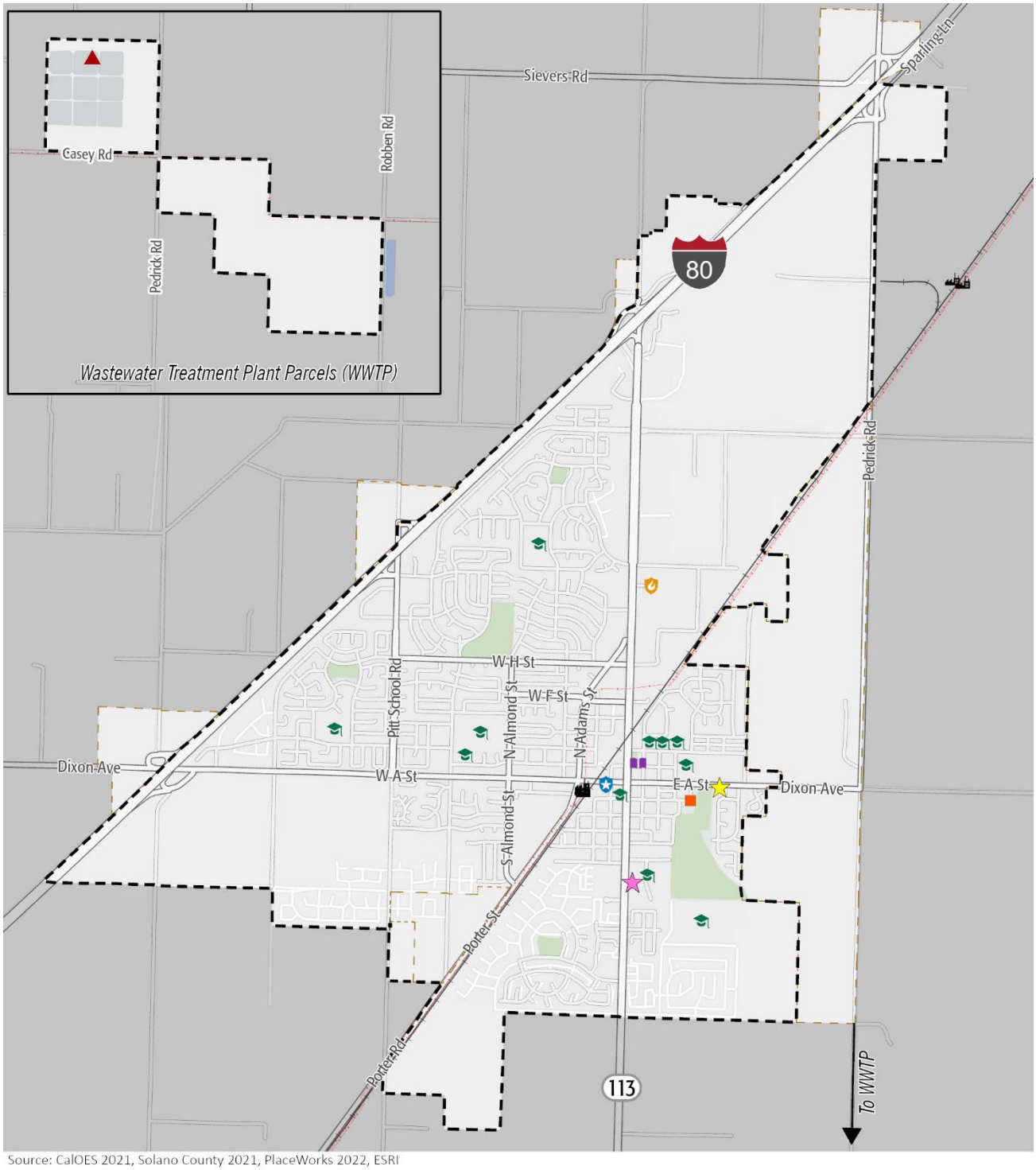
With advanced warning, evacuation can be effective in reducing injury and loss of life during a catastrophic event. Figure NE-12 shows evacuation routes in Dixon, including I-80, SR-113, Dixon Avenue, West A Street, H Street, Stratford Avenue, Pitt School Road, Lincoln Street, Almond Street, Adams Street, and First Street.

Figure NE-13 shows residential parcels in Dixon with evacuation constraints. Parcels with an evacuation constraint may have only one emergency evacuation route. The lack of multiple emergency access points limits roadway access for these properties, which may create difficulties if there is a need to evacuate. The City has multiple evacuation-constrained neighborhoods, most notably along the northern border of the city between Pitt School Road, West H Street, and SR-113. Other major evacuation-constrained neighborhoods are along the southern border of the city near Porter Street and Parkway Boulevard. The railroad also poses an evacuation constraint, as an accident along the rail line could prevent residents and emergency services from traveling east-west in the city.

Climate-change-related changes in flooding, extreme heat, and severe weather patterns will likely make natural hazards emergencies both more frequent and more intense. Given the ability of floods, extreme heat, and severe weather to damage structures and infrastructure and harm human health, increased frequency of these natural hazards will likely increase the demand for disaster response and recovery services. More frequent disasters will also increase the need for adequate evacuation routes.

See Chapter 4: Public Services and Facilities for more information and policies regarding police, fire, and emergency response in Dixon.

Figure NE-11 Community Facilities

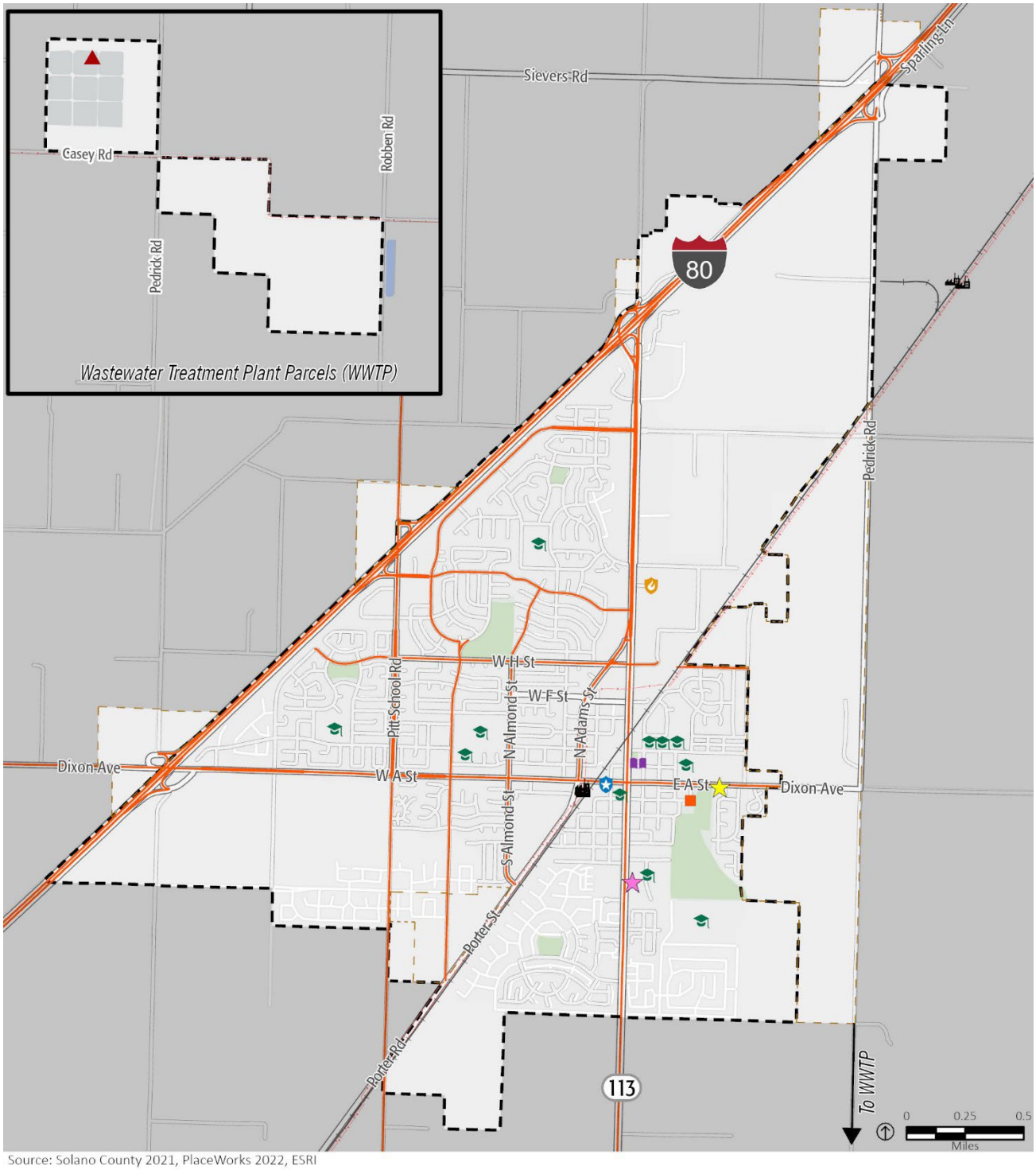


Source: CalOES 2021, Solano County 2021, PlaceWorks 2022, ESRI

City Boundary
Sphere of Influence
Railroad
Transmission Lines
Parks and Open Space
City Hall
Community Center
Library
School
Fire Station
Police Station
Water/Wastewater Treatment Facility
Electrical Substation
Dixon May Fair Grounds

0 0.25 0.5
Miles

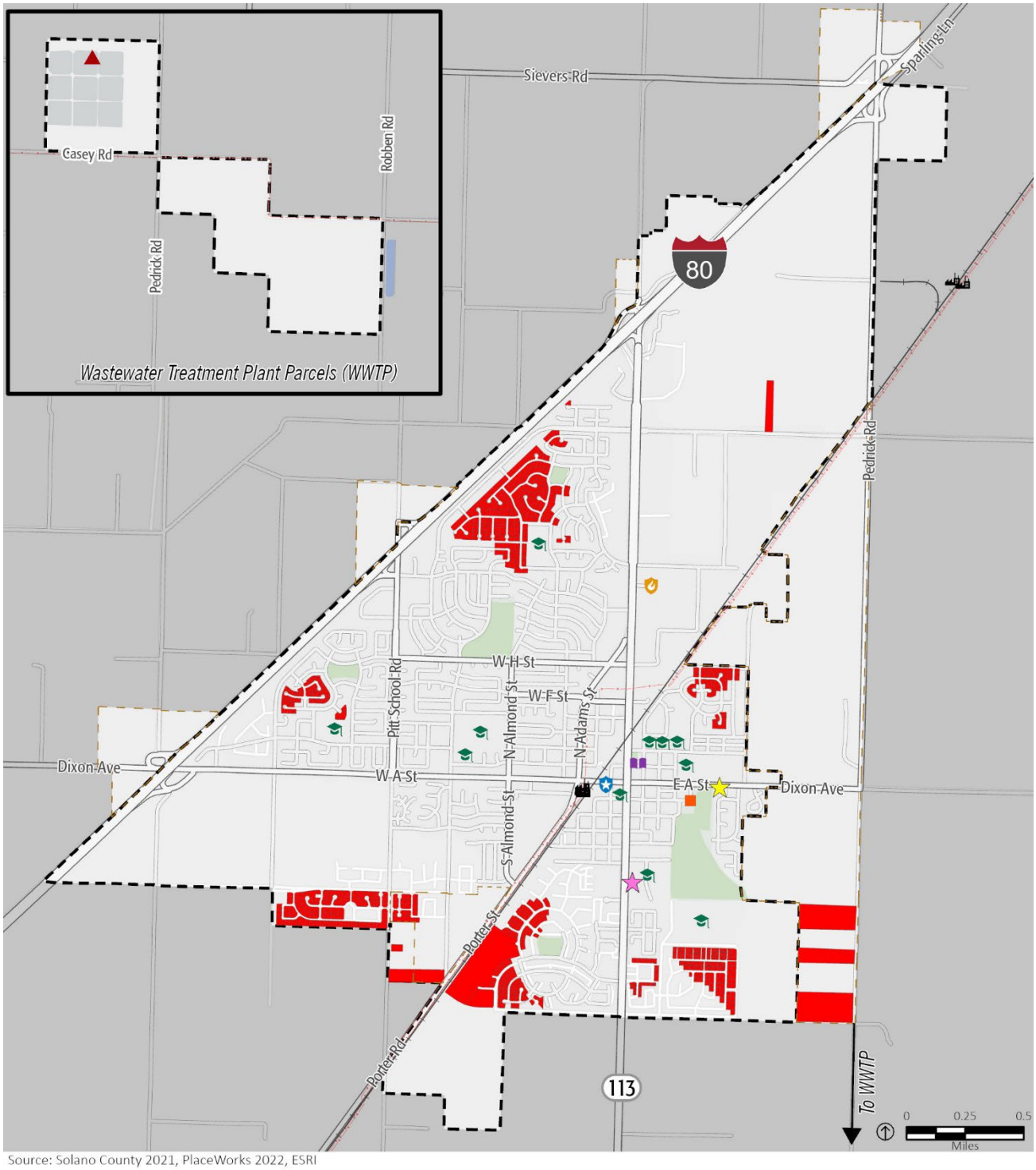
Figure NE-12 Evacuation Routes



Source: Solano County 2021, PlaceWorks 2022, ESRI

- City Boundary
- Sphere of Influence
- Railroad
- Transmission Lines
- Parks and Open Space
- Possible Evacuation Route
- City Hall
- Community Center
- Library
- School
- Police Station
- Fire Station
- Water/Wastewater Treatment Facility
- Electrical Substation
- Dixon May Fair Grounds

Figure NE-13 Evacuation Constrained Residential Parcels



Source: Solano County 2021, PlaceWorks 2022, ESRI

- City Boundary
- Sphere of Influence
- Railroad
- Transmission Lines
- Parks and Open Space
- Residential Parcels with Possible Evacuation Constraints
- City Hall
- Community Center
- Library
- School
- Fire Station
- Police Station
- Water/Wastewater Treatment Facility
- Electrical Substation
- Dixon May Fair Grounds

GOAL NE-4: Protect life and property from natural and human-made hazards and provide quick, effective response to disasters and emergencies.

POLICIES

Geologic and Seismic Hazards

NE-4.1 Protect life, the natural environment, and property from hazards due to seismic activity and geologic hazards.

NE-4.2 Ensure that structures intended for human occupancy and critical facilities are designed and constructed to retain their structural integrity and key operational capabilities when subjected to seismic activity or geologic hazards, in accordance with the California Building Code.

NE-4.3 In areas of high liquefaction risk (see Figure NE-5), require that project proponents submit geotechnical investigation reports and demonstrate that the project conforms to all recommended mitigation measures prior to City approval.

NE-4.4 Require new development to deploy best practices for minimizing erosion and promoting slope stabilization in areas that have been subject to erosion or landslides.

NE-4.5 Collaborate with the Bureau of Reclamation, Solano Irrigation District, Solano County Water Agency, and other responsible agencies to ensure the seismic and geologic hazard safety of the Monticello Dam.

Flood Hazards

NE-4.6 Ensure that new development is sited, constructed, and operated to minimize impacts and risks of flood hazards to public health, safety, and welfare.

NE-4.7 Require new development to adhere to the Floodplain Management Ordinance and to employ floodproofing construction techniques to the extent feasible.NE-4.8 Prohibit new critical and essential public services and facilities from being located in the floodplain, as shown on Figure NE-7. Retrofit existing facilities to be flood resilient and remain operational in the event of a flood.

NE-4.9 Coordinate with local and regional flood control agencies, such as the Dixon and Solano Resource Conservation Districts, to reduce regional flood hazards and preserve the integrity of flood control infrastructure.

NE-4.10 Promote public awareness of flood hazards and provide guidance on how to prepare for a flood.

Wildfire and Smoke

NE-4.11 Evaluate proximity to fire hazard and wildland-urban interface areas and feasibility of maintaining defensible space as part of the development review process.

NE-4.12 Ensure adequate firefighting infrastructure, including water supply and pressure, road and building clearance for firefighting vehicles, and clear and legible street signage throughout the community.

NE-4.13 Place all new public facilities outside of identified fire hazard risk areas, as feasible. Appropriately retrofit or, if necessary, relocate existing public facilities outside of identified fire hazard areas.

NE-4.14 Encourage the retrofitting of older buildings to current safety standards in coordination with proposed major remodeling or additions.

NE-4.16 Develop an incentive program for property owners to retrofit their buildings to improve fire resilience.

Severe Weather

NE-4.15 Coordinate with PG&E, MCE Community Choice Energy, and local solar energy installers to support resiliency of the local power grid, including solar and battery systems for residents, businesses, and public agencies.

NE-4.16 Support weatherization retrofits of older homes via provision of educational information, helping residents connect with contractors and existing financial assistance programs, and providing financial incentives and rebates.

NE-4.17 Regularly trim trees and remove dead trees to prevent damage during severe weather events.

Extreme Heat

NE-4.18 Elevate extreme heat to a hazard of concern in Dixon.

NE-4.19 Provide for the continued establishment, support, and maintenance of cooling centers and ensure that these centers are accessible and welcoming to those with language barriers or access and functional needs.

NE-4.20 Work with the Solano County Public Health Department to provide public education about the health impacts of high heat and effective response strategies.

NE-4.21 Encourage new developments and existing property owners to incorporate sustainable, energy-efficient, and environmentally regenerative features into their facilities, landscapes, and structures to reduce energy demands and improve on-site resilience to heat.

NE-4.22 Encourage the use of native vegetation and natural or green infrastructure to absorb the impacts of extreme heat and associated natural hazards, as feasible.

Human Health Hazards

NE-4.23 Support the efforts of the Solano County Public Health Department and local community organizations to monitor and report on emerging pest and disease conditions and to distribute health resources and educational information.

NE-4.24 Look for opportunities to ensure that workers in outdoor industries have the training and resources to be adequately protected from environmental hazards, including extreme heat, poor air quality, pests, and diseases.

NE-4.25 Work with the Solano County Public Health Department to plan for future pandemic events, including securing necessary public health supplies, preparing effective messaging for preventive actions and treatments, and identifying and evaluating potential public health measures.

NE-4.26 Work with the Solano County Public Health Department to help low-income residents and residents lacking health insurance connect with local health care organizations and service providers.

ACTIONS

NE-4.A Continue to implement provisions for flood hazard reduction in Special Flood Hazard Areas in order to limit the potential for adverse effects on public health, safety, and general welfare.

NE-4.B Seek grants and collaborate with local and regional agencies such as the Dixon and Solano County Resource Conservation Districts to ensure that adequate funding and staff resources are dedicated to maintenance and expansion of flood control infrastructure.

NE-4.C Assess the feasibility of implementing urban heat island mitigation technologies, including UV-reflective materials and coatings, porous pavement, or other technologies that can reduce surface and air temperature and mitigate for the effects of extreme heat.

NE-4.D Work with the County Public Health Department and Office of Emergency Services to promote public awareness of local hazards and educate the public about how to minimize personal exposure and how to respond to emergency events.

NE-4.E Coordinate with Solano County Public Health to provide health resources to help residents respond to poor air quality and high heat events.

NE-4.F Develop an incentive program for property owners to retrofit their buildings to improve fire resilience.

NE-4.G Support financing efforts to increase community access to energy-efficient and environmentally regenerative architectural and landscaping features.

NE-4.H Raise awareness about local cooling centers by including informative pamphlets in residents' water and sewer bills.

NE-4.I Support partnerships and lead efforts as appropriate to seek grant funding and other support to ensure that public facilities such as schools, community centers, and bus stops are resilient to high heat.

NE-4.J Work with the County's Public Health Department to provide house calls to residents such as single seniors who are particularly vulnerable to heat during high heat events.

(Policies and actions related to the urban forest canopy under Goal NE-1 also offer co-benefits for mitigating the adverse effects of extreme heat. Policies and actions related to stormwater management in the Public Facilities and Services Element also offer co-benefits for flood risk mitigation).

EMERGENCY RESPONSE

POLICIES

NE-4.27 Continue to maintain an Emergency Operations Plan, Emergency Response Plan, Local Hazard Mitigation Plan, and Risk and Resilience Plan to effectively prepare for , respond to, recover from, and mitigate the effects of natural or human-caused disasters that require the planned, coordinated response of multiple agencies or jurisdictions.

NE-4.28 Locate critical facilities, such as hospitals and health care facilities, emergency shelters, fire stations, police stations, emergency command centers, and other emergency service facilities and utilities so as to minimize exposure to flooding, seismic, geologic, wildfire, and other hazards.

NE-4.29 Increase public awareness of City and County emergency preparedness programs and resources for all hazards.

NE-4.30 Address the safety needs of occupants of evacuation-constrained parcels via road construction and design, operating evacuation assistance programs in conjunction with local transit providers to help those with limited mobility or lacking vehicle access, and by ensuring that evacuation routes remain operational in the event of an emergency.

NE-4.31 Coordinate between departments to ensure that evacuation routes, as shown in Figure NE-12, are able to remain operational in the event of an emergency.

NE-4.32 Require new development to be served by at least two access points.

NE-4.33 Work with Union Pacific Railroad to create an overpass or underpass to ensure that traffic is able to cross the railroad during an emergency

NE-4.34 Increase resident enrollment in Alert Solano and Dixon Community Connect.

NE-4.35 Identify additional emergency warning mechanisms that can increase access to emergency warnings and ensure that emergency notifications are provided in formats and languages appropriate for the demographics of Dixon.NE-4.36 Establish and maintain a network of equitably located community resilience hubs throughout Dixon and ensure that resilience hubs are situated outside of areas at risk from hazard impacts to the extent possible, offer refuge from extreme heat and poor air quality due to regional wildfire smoke, and are equipped with renewable energy generation and backup power supplies. Such facilities should be in easily accessible locations and be available to all community members.

ACTIONS

NE-4.J Establish a Community Emergency Response Team (CERT) program to educate volunteers about disaster preparedness and train them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations.

NE-4.K Annually review and revise the City's Emergency Operations Plan (EOP) as needed, and assess the need for modifications following post-incident analyses, post-exercise critiques, and changes in policy.

NE-4.L Operate evacuation assistance programs in conjunction with local transit providers to help those with limited mobility or lacking vehicle access.

2.6 ENVIRONMENTAL PROTECTION

AIR, SOIL, AND WATER QUALITY

Indicators of environmental risk come from both point and non-point source pollutants. Point source pollution, which comes from a traceable point, like factory smokestacks or leaking chemical tanks, and non-point source pollution, which is not traceable to a single point and can include pollutants like car exhaust and agricultural runoff, can both affect environmental health. The steady stream of cars and trucks passing through on Highway I-80 and SR-113 are some of Dixon's biggest sources of non-point source pollution, generating air, noise, and water pollution. CalEnviroscreen, a mapping tool that identifies communities affected by different pollution sources, rates the census tract north of H Street in the highest quartile for exposure to traffic-related environmental pollution from exposure to particulate matter from the I-80 freeway and Highway 113.

Highway pollution, which affects air, soil, and water, contains toxic chemicals, particulate matter, and carcinogens. Other non-point source air and noise pollution comes from seasonal use of agricultural equipment and aircraft flying over from nearby Travis Air Force Base. (See Chapter 2: Community Character and Design for a more detailed discussion of noise pollution.)

Where schools or residential uses are near sources of pollution, people may be at higher risk of exposure to unsafe environments, but city policies can help prevent pollution through a variety of strategies. Buffers, such as trees or non-sensitive land uses like commercial buildings, can create safe distances between people and pollutant sources. Collaboration with appropriate regional agencies, including the State Water Resources Control Board, and the Regional Water Quality Control Board, which manage water pollution, and the Yolo-Solano Air Quality Management District, which regulates air pollution and provides funding and support for air quality improvements, ensure that regional and State environmental standards are met.

HAZARDOUS MATERIALS

Some hazardous materials found in, around, or passing through Dixon could pollute the air, soil, and water. Pesticides used on nearby agricultural lands or in local landscaping run off into water and can impact the soils and groundwater; CalEnviroscreen ranks all four of Dixon's census tracts in the highest quarter of the state for risk of exposure to pesticides. Point sources of pollution in Dixon include some contaminated sites within the city, such as gas stations with leaking storage tanks, fertilizer shops, and former trucking sites, all of which can release chemicals into the soil, water, and air. Several existing contaminated sites are located in the area; due to the number of underground cleanup sites, including gas station fuel tanks, solvents, heavy metals, and pesticides, CalEnviroscreen ranks the census tract that contains downtown Dixon in the 91st percentile for risk of groundwater contamination. The Dixon area also has 33 plugged and abandoned oil wells, which could also impact groundwater and soils.

The California Department of Toxic Substances Control has primary regulatory responsibility for the management of hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the Hazardous Waste Control Law. The California Environmental Protection Agency (CalEPA) also plays a major role in overseeing the management of hazardous materials and waste within California. In 1993, SB 1082 gave CalEPA the authority and responsibility to establish a unified hazardous waste and hazardous materials management and regulatory program, commonly referred to as the Unified Program. The purpose of this program is to consolidate and coordinate six

different hazardous materials and hazardous waste programs and to ensure that they are consistently implemented throughout the state. State law requires county and local agencies to implement the Unified Program through Certified Unified Program Agencies (CUPA). The Solano County Department of Resource Management is the designated CUPA for Solano County.

The Solano County Department of Resource Management is also the designated administering agency for Solano County's Area Hazardous Material Monitoring Program. In the event of a spill or release, this agency is notified immediately to obtain the most up-to-date hazardous materials storage information. Major incidents are coordinated through the County OES. The Dixon Fire Department may also respond to hazardous materials incidents.

The presence of I-80 and the Union Pacific railway increase the likelihood that Dixon will be subject to minor hazardous materials spills in the future. The use of agricultural chemicals in and around Dixon will likely continue to influence local air, soil, and water quality. Climate change is unlikely to substantially affect hazardous materials transportation incidents. However, increases in the frequency and intensity of hazards such as floods and severe weather may create a greater risk of hazardous materials releases during these events.

NOISE

Noise is a sound which is unhealthy or unwanted. It can be a human-caused public health hazard which includes excessive, intrusive, or objectionable noises that disrupt daily life. Noise has been tied to physiological effects ranging from hearing loss, high blood pressure, and sleep disturbance, to communication interference and general interruption and annoyance of normal daily activities.

The following noise measurement scales are used to describe noise in a particular location:

Frequency. Frequency is the composition or spectrum of the sound. Frequency is a measure of the pressure fluctuations per second of a sound wave.

Level. The decibel (dB) system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Decibel measurement may also be "A-weighted" to de-emphasize the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear in a manner that correlates well with subjective reactions to noise. Ambient sounds generally range from 30 A-weighted decibels (dBA) (very quiet) to 100 dBA (very loud).

Variation. Variation is the sound level over time. Predominant rating scales for human communities in the State of California are Equivalent Noise Level (Leq) and the Community Noise Equivalent Level (CNEL) or the day-night average level (Ldn) based on A-weighted decibels. CNEL is the time-varying noise over a 24-hour period, with a 5-dBA weighting factor applied to the hourly Leq for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). Ldn is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and Ldn are within 1 dBA of each other and are normally interchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Dixon is an urbanized area with open space and agricultural uses. The major sources of noise in the city include vehicle traffic along roadways; agricultural, industrial, and commercial processes; and residential noises, such as people talking, sporting events in parks, and vocalizations from domesticated animals.

Vehicular traffic, including automobile and truck traffic, is the predominant noise source within the city. The level of vehicular traffic noise varies with many factors, including traffic volume, vehicle mix (including percentage of trucks), traffic speed, and distance from the roadway. Interstate 80, State Route 113, and city streets contribute to the noise environment of the city. Figure NE-14 shows the contours

of existing noise levels (2019) along roadways in the Planning Area, and Figure NE-15 shows projected noise level contours at buildout of General Plan land uses in 2040.

The noise impacts associated with rail activities depend on a number of factors, including the type of train, the length of train, the use of a horn, the physical track conditions, the geometry and intervening structures between the rail line and its receptor, the number of trains operating, and the speed of the train. Rail operations contribute to the noise environment in the city. The Union Pacific Railroad and Amtrak Capital Corridor railroad pass through but do not stop in Dixon, paralleling South Porter Road through the length of the city. These trains generate high noise levels when passing through the city.

Agricultural activities in the Planning Area can be sources of intermittent noise. For example, high noise levels are generated by wind machines used for agriculture in the early spring, with noise levels of approximately 90 dBA at nearby residential receptors. Commercial- industrial and light-industrial land uses in the city have the potential to generate high noise levels and impact surrounding land uses with their equipment operation. Noise sources from these land uses include: air conditioning or refrigeration units, power tools, lawn equipment, generators, and other powered mechanical equipment.

Other sources of noise can include construction and the use of portable or small-scale pieces of equipment. Construction can be a substantial, though short-term, source of noise, and is most disruptive when it takes place near sensitive uses or during night or early morning hours. Power equipment, such as leaf blowers and drills, can produce high noise levels at the location of work. Other amplified sounds, such as audio equipment at either a sanctioned event or residential property, can also create noise exposure.

Land uses have different levels of compatibility relative to noise, and the State of California mandates that general plans include noise level compatibility standards for the development of land as a function of a range of noise exposure values. Table NE-2 identifies noise level compatibility standards and interior noise standards.

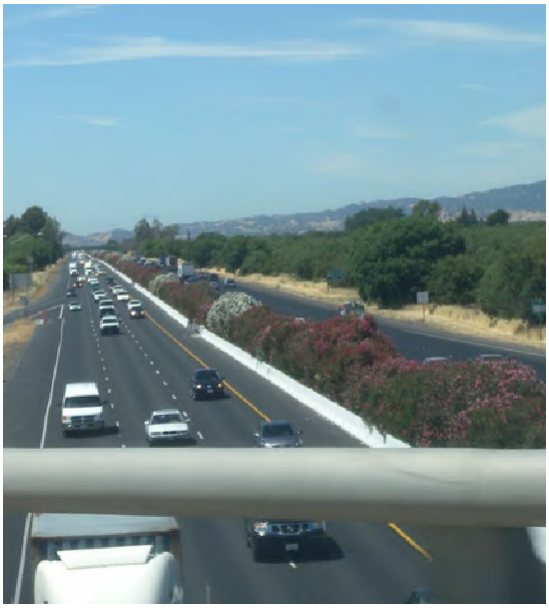


Figure NE-14 Existing Noise Contours (2019)

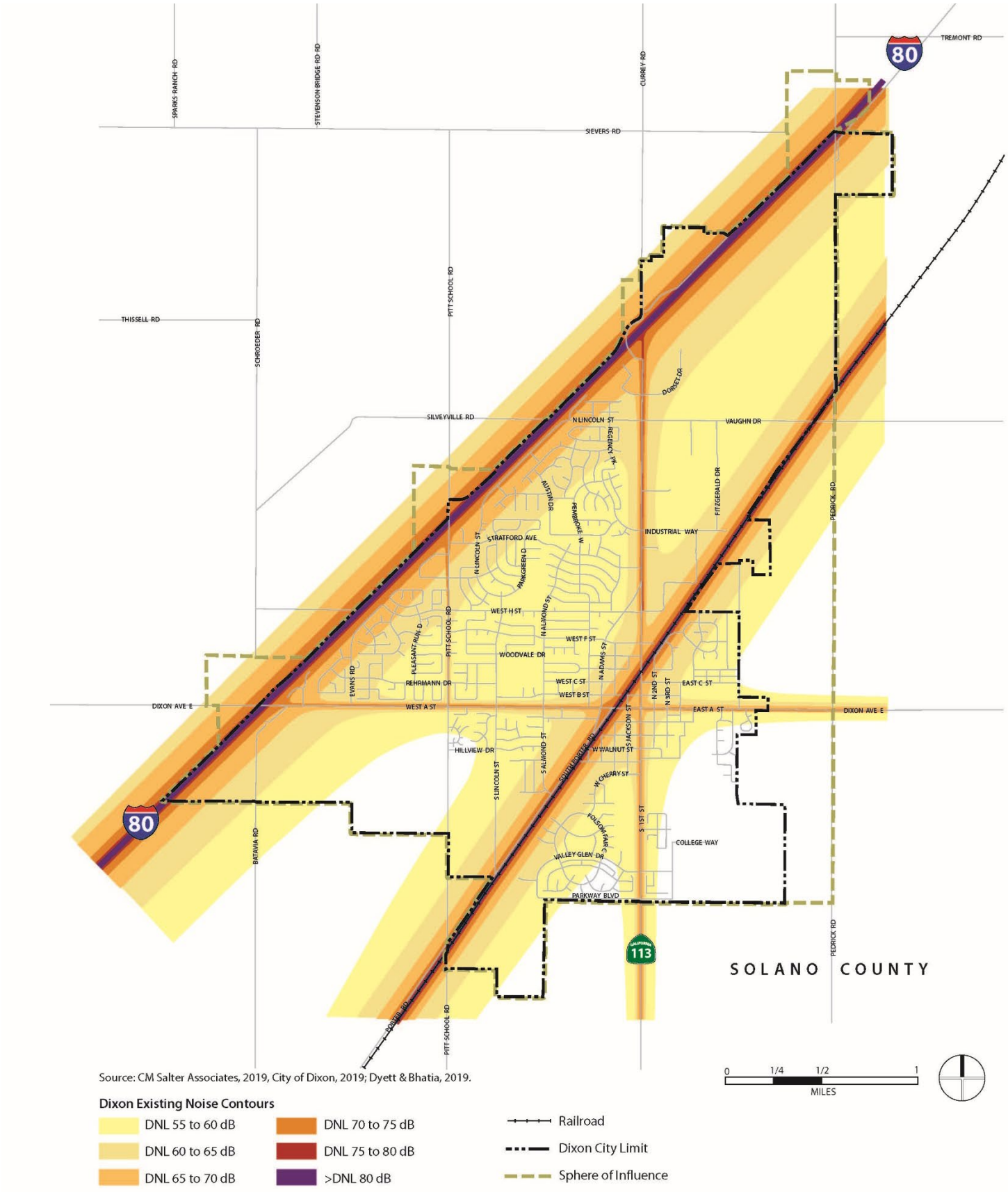


Figure NE-15 Future Noise Contours (2040)

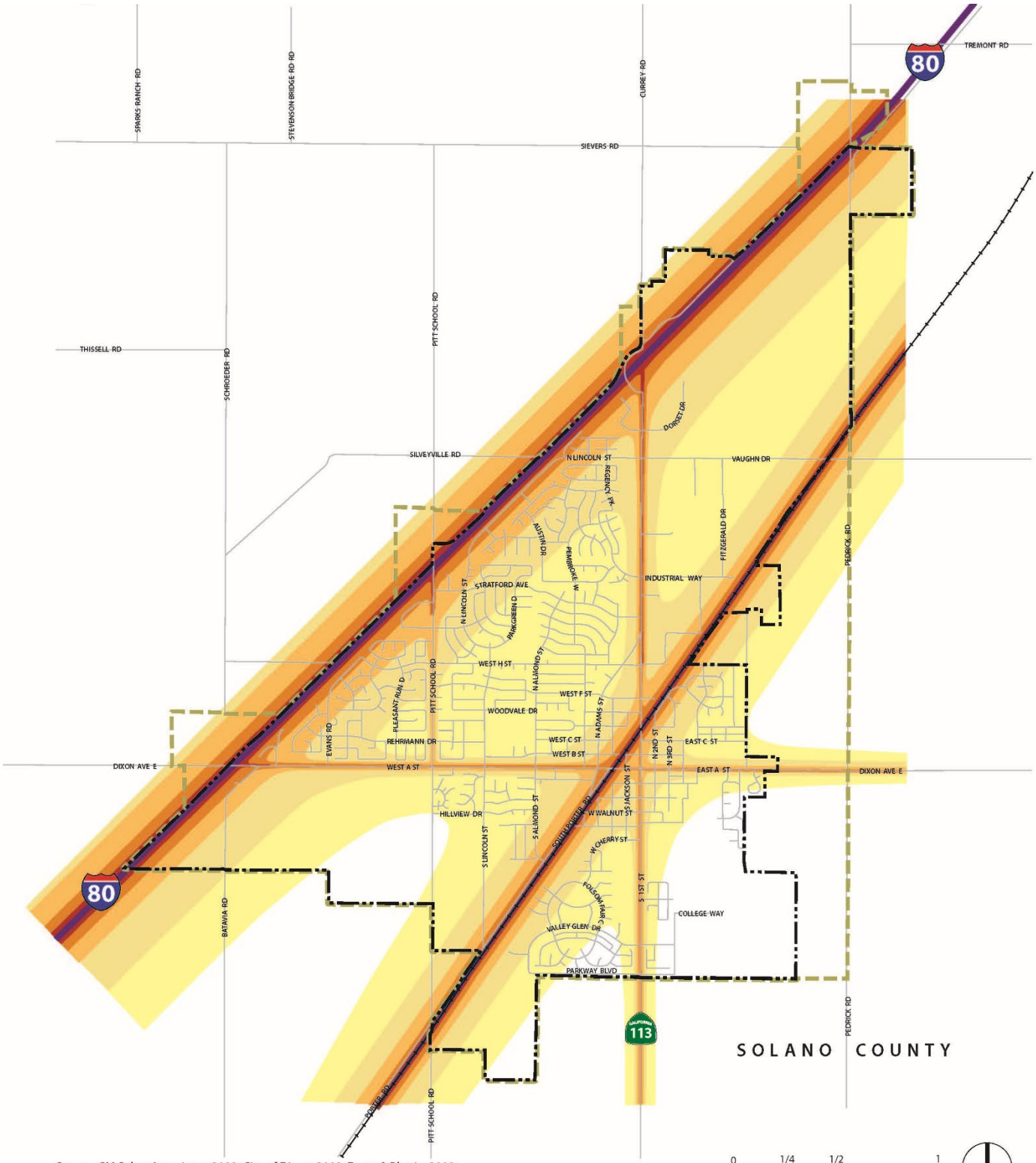
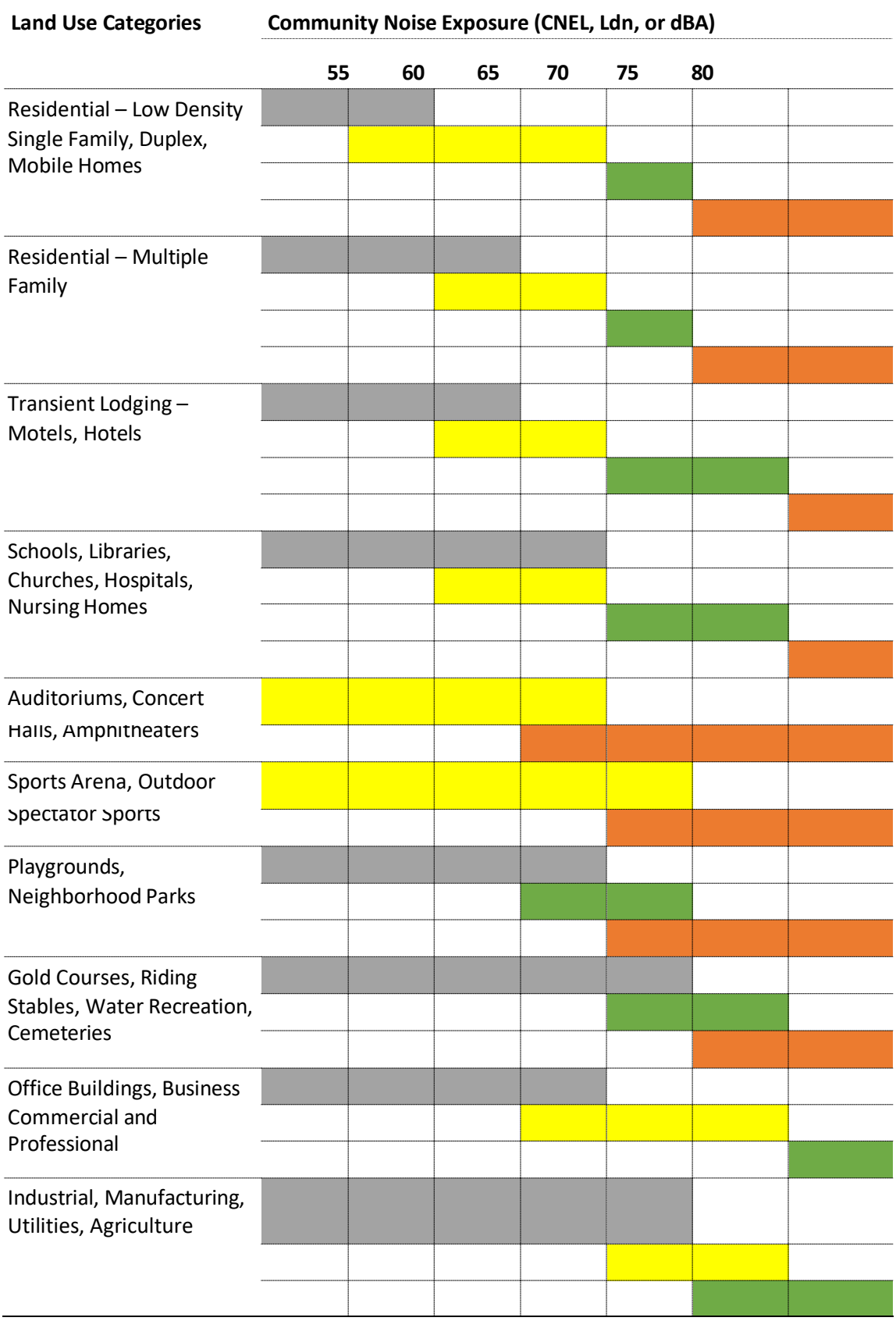


Table NE-2: Community Noise Compatibility Matrix



Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. Outdoor areas are suitable for normal outdoor activities for this land use.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air-conditioning, will normally suffice.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Considerations in determination of noise – compatible land use

A. Normalized Noise Exposure Information Desired

Where sufficient data exists, evaluate land use suitability with respect to a "normalized" value of CNEL or Ldn. Normalized values are obtained by adding or subtracting the constants described in Table I to the measured or calculated value of CNEL or Ldn.

B. Noise Source Characteristics

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65 dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compatible with the 65 dB CNEL criterion wherever possible, and in order to facilitate the ability of airports to comply with the Act, residential uses located in Community Noise Exposure Areas greater than 65 dB should be discouraged and considered located within normally unacceptable areas.

C. Suitable Interior Environments

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB CNEL of Ldn. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum accept• able distance to a noise source.

D. Acceptable Outdoor Environments

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered “normally acceptable" for that land use category, may be appropriate.

Notes:

1. The Community Noise Equivalent Level (CNEL) and Day-Night Noise Level (Ldn) are measures of the 24-hour noise environment. They represent the constant A-weighted noise level that would be measured if all the sound energy received over the day was averaged. In order to account for the greater sensitivity of people to noise at night, the CNEL weighting includes a 5-decibel penalty on noise between 7:00 pm and 10:00 pm and a 10-decibel penalty on noise between 10:00 pm and 7:00 am of the next day. The Ldn includes only the 10-decibel weighting for late-night noise events. For practical purposes, the two measures are equivalent for typical urban noise environments.

GOAL NE-5: Minimize air, soil, noise, and water pollution as well as community exposure to hazardous conditions.

AIR, SOIL, AND WATER QUALITY

POLICIES

NE-5.1 Coordinate with the Yolo-Solano Air Quality Management District and other local, regional, and State agencies to protect and enhance air quality in Dixon.

NE-5.2 Continue to use the Yolo-Solano Air Quality Management District's Handbook for Assessing and Mitigating Air Quality Impacts for environmental review of proposed development projects.

NE-5.3 Require dust abatement actions for all new construction and redevelopment projects, consistent with the Yolo-Solano Air Quality Management District's Best Available Control Measures.

NE-5.4 Ensure adequate buffer distances are provided between offensive odor sources and sensitive receptors, such as schools, hospitals, and community centers.

NE-5.5 Encourage development to minimize grading related to the topography and natural features in order to limit soil erosion.

NE-5.6 Require construction projects that disturb 10,000 square feet of ground cover revegetate graded areas with native or locally-appropriate vegetation to restore biological diversity and minimize erosion and soil instability.

NE-5.7 Coordinate with Yolo and Solano counties, the Resource Conservation District, and the Natural Resources Conservation Service in implementing programs to reduce soil erosion by wind and water and prevent soil contamination.

NE-5.8 Coordinate with the Dixon Resource Conservation District, California Water Service, Solano Subbasin Groundwater Sustainability Agency, Solano County and others to promote, protect, and improve water quality in Dixon.

NE-5.9 Protect surface water and groundwater resources from contamination from point (single location) and non-point (many diffuse locations) sources by pursuing strategies to minimize the pollutant and sediment levels entering the hydrological system through stormwater, agricultural, and other urban runoff.

NE-5.10 Encourage, through redevelopment and retrofitting, phasing out of commercial and industrial building materials such as galvanized roofs that leach metals into storm water runoff.

NE-5.11 Reduce, through redevelopment and retrofitting, the amount of uncovered industrial and commercial areas where the work activity may contribute pollutants.

NE-5.12 Support programs that encourage residents and business owners to cleanup trash and debris as well as pet waste before it enters the storm drain systems

NE-5.13 Work with the Solano County Agricultural Commissioner and other responsible agencies to identify and enforce mechanisms to reduce pesticide use and control residual pesticides and pesticide runoff to prevent significant risk to water quality, vegetation, wildlife, and humans.

ACTIONS

NE-5.A Explore the feasibility of converting the City fleet of street sweepers, Readi-Ride vans and other large-scale equipment from fossil fuel to alternative fuel types using funding and incentives offered by the Yolo-Solano Air Quality Management District.

NE-5.B Update the City's Storm Water Quality Management Plan as needed to comply with the NPDES General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems, Order No. 2003-0005-DWQ, or as amended.

NE-5.C Consider developing a green infrastructure plan that employs tools such as bioswales, permeable pavement, rain gardens, rain barrels and cisterns, and green roofs to treat stormwater, attenuate floods, increase groundwater recharge, and reduce urban heat islands.

NE-5.D Install grease/oil separators in storm drains along roadways with heavy traffic to keep these contaminants out of storm runoff.

NE-5.E Provide educational materials about the use, storage, and disposal of hazardous materials to business owners and residents.

NE-5.F Encourage continued engagement in local efforts to protect stormwater quality by continuing to support the City's educational field trips, provision of pet waste bags and trash receptacles around ponds and stormwater facilities, and cleanup days at ponds and parks.

HAZARDOUS MATERIALS

POLICIES

NE-5.14 Continue to require remediation of hazardous material releases from previous land uses as part of any redevelopment activities.

NE-5.15 Regulate development on sites with known contamination of soil or groundwater to ensure that construction workers, future occupants, adjacent residents, and the environment are adequately protected

from hazards associated with contamination.

NE-5.16 Promote public education regarding safe disposal of household hazardous waste via social media, local newspaper and news ads, City representatives at public events, and partnerships with schools and community groups.

NE-5.17 Collaborate with the Solano County Public Health Department to provide educational and health resources to residents and workers who may be at elevated risk of hazardous material exposure.

NOISE

POLICIES

NE-5.18 Ensure that noise does not have a substantial, adverse effect on the quality of life in the community.

NE-5.19 Apply the General Plan noise and land use compatibility standards to all new residential, commercial, and mixed-use development and redevelopment, as shown in Table NE-2.

NE-5.20 Require acoustical studies with appropriate mitigation measures for projects that are likely to be exposed to noise levels that exceed the 'normally acceptable' standard and for any other projects that are likely to generate noise in excess of these standards.

NE-5.21 Require that new noise-producing uses are located sufficiently far away from noise-sensitive receptors and/or include adequate noise mitigation, such as screening, barriers, sound enclosures, noise insulation, and/or restrictions on hours of operation.