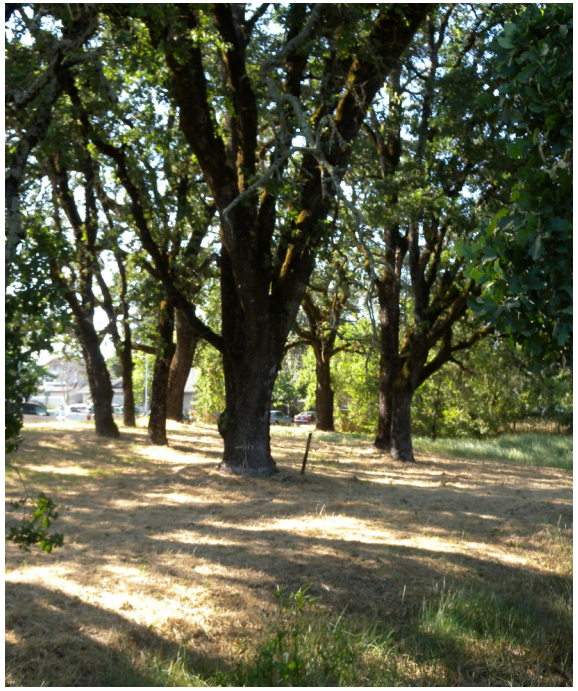






5 ENVIRONMENTAL QUALITY

Ensuring a high level of environmental quality in the Planning Area is integral to maintaining and improving the health and safety of all residents, employees, and visitors of Windsor, as well as enhancing ecological systems in the area and the surrounding region. The Plan establishes goals and policies which, in combination with General Plan policies and other local, State, and federal regulations, mitigate the potential negative effects of natural and man-made environmental hazards that threaten public health and safety. Specifically, this chapter addresses noise impacts, air quality, biological resources, and hazards and flooding. Water resources are addressed in Chapter 6: Public Facilities, Services, and Infrastructure.







Significant existing noise sources in the Planning Area include Highway 101 and Windsor River Road. Rail service along the SMART corridor is a future noise source.

5.1 NOISE

Noise can be defined as unwanted sound. Excessive noise exposure can cause adverse physical and psychological responses, in addition to interfering with speech, concentration, and performance. These effects are particularly disruptive for noise-sensitive land uses, such as schools, churches, hospitals, convalescent homes, and residential neighborhoods. For residential areas, a descriptor called day/night level (Ldn) is used to assess transit noise impacts. Ldn is often used for transit in noise impact and abatement analyses for residential uses. Windsor's General Plan identifies land use compatibility with Ldn or CNEL (Community Noise Equivalent Level) noise exposure.

This section of the Plan describes existing and anticipated future noise environments within the Planning Area and provides policies to reduce the negative effects of noise on the surrounding population.

ROADWAY NOISE

The most significant traffic noise in the Planning Area is generated by vehicular traffic along Highway 101, Old Redwood Highway, and Windsor River Road. Existing noise levels are shown in Figure 5-1. The Plan increases the intensity of uses in the Station Area/Downtown, which will result in more residents and jobs, and subsequently, higher traffic volumes and slightly higher noise levels. Future noise levels resulting from analysis of projected traffic and railroad operations are shown in Figure 5-2.

RAILROAD NOISE

Noise levels expected from SMART rail service have potentially significant (over 60 dBA Ldn) impacts within 50 feet of the track, as shown in Figure 5-2. The area within 50 feet of the track, with an estimated 63 dBA Ldn, reaches the edge of several parcels, though generally does not extend beyond the edge of the right-of-way. Noise levels are expected to drop to 59 dBA Ldn at 100 feet away from the track. This area will cover a greater portion of parcels that line the track. Since community noise levels are averaged over a 24-hour period, uses proximate to the rail corridor may experience event noise when trains pass through. Other potential noise impacts from the rail service include impacts from train horns sounding.

GOALS AND POLICIES

Goal EQ-A: Ensure that the Station Area/Downtown is a pleasant place to live and work by protecting residents, workers and visitors from noise that affects comfort and health, while accommodating a mix of higher intensity uses in the area.

Transportation-related noise is the most dominant source of noise within the Planning Area. Through the General Plan and this Plan, the Town is working to ensure maximum attenuation of noise effects along primary corridors and in the Downtown core.

EQ-1 Require residential and other noise sensitive land uses within the 60 dBA contours, as shown in Figure 5-2, to incorporate adequate noise attenuation into the design and site planning of the project in order to achieve an interior noise level of not more than 45 dBA CNEL.

EQ-2 Require that new parks and open spaces are not located in areas expected to exceed a 70 dBA CNEL in the future, as shown on Figure 5-2.

EQ-3 Require that new development near the train tracks is limited as follows to avoid impact from excessive vibration:

- No new buildings where low ambient vibration is essential for interior operations may be located within 225 feet of the railroad tracks. These uses may include but are not limited to vibration-sensitive research and manufacturing, hospital research areas, concert halls, and TV/recording studios.
- No new residences or other buildings where people sleep may be located within 100 feet of the railroad tracks. These uses include multi-family dwellings, houses, hospital patient rooms, and hotels.
- No schools, churches, or commercial offices may be located within 70 feet of the railroad tracks.

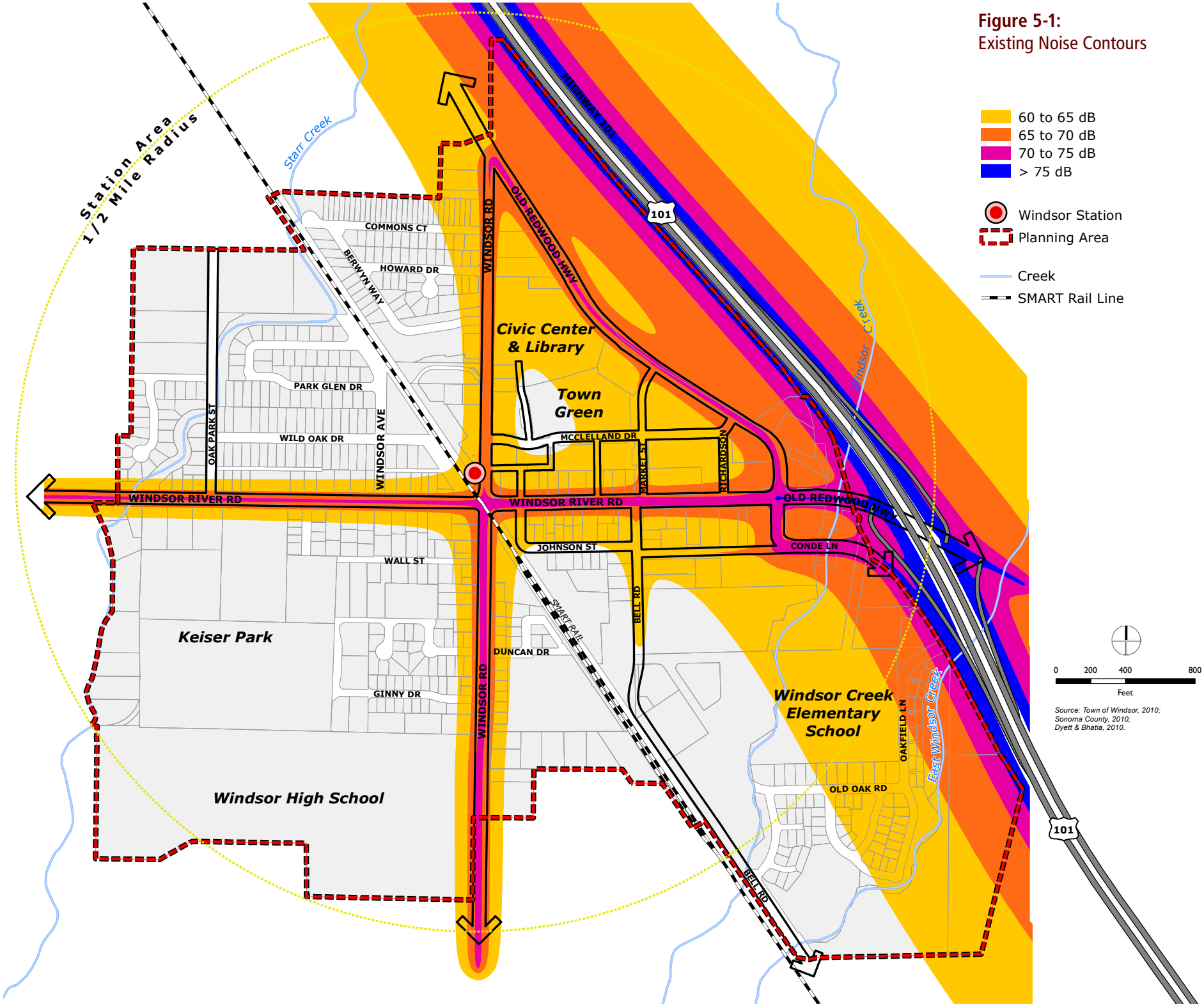
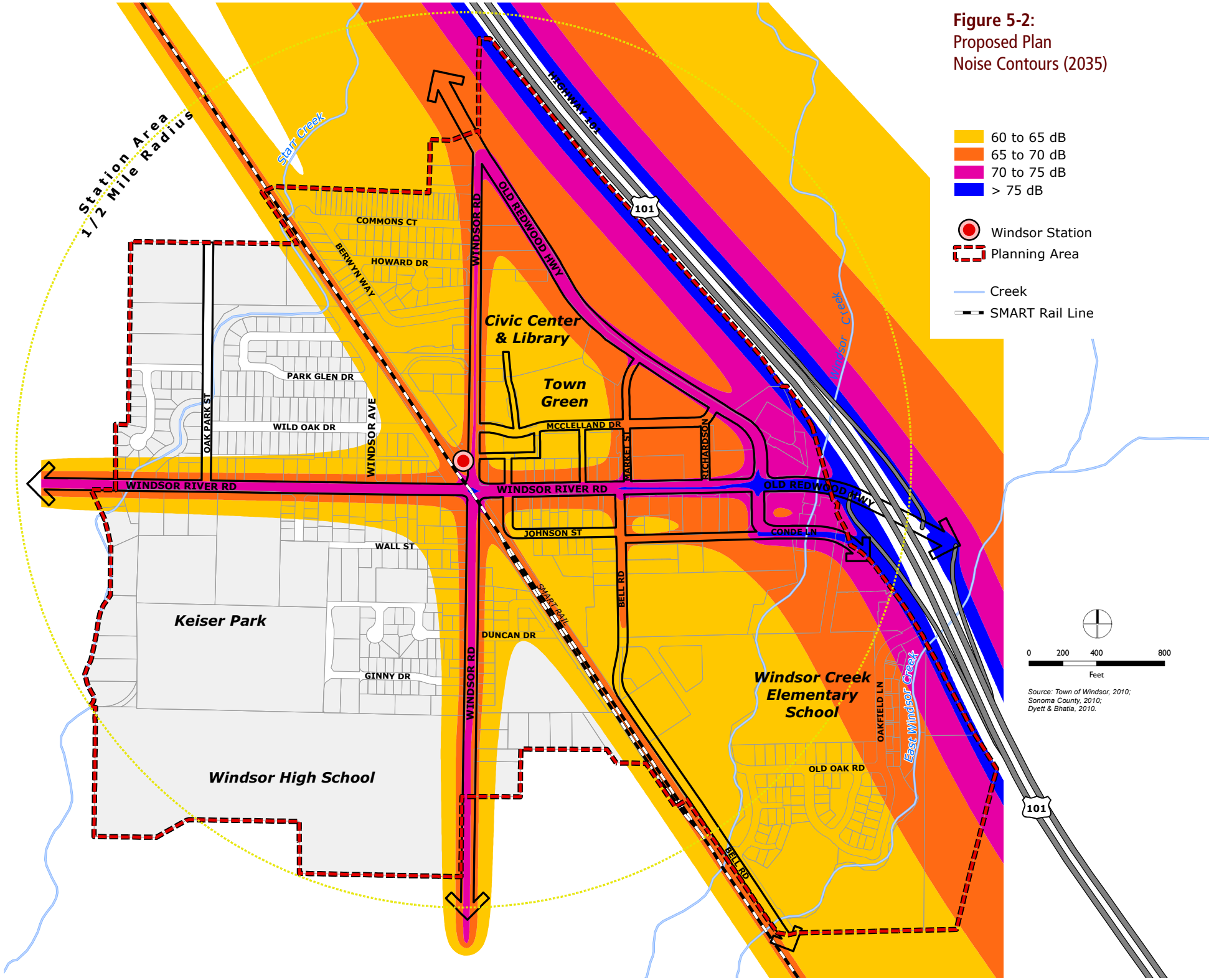

Figure 5-1:
Existing Noise Contours
60 to 65 dB
65 to 70 dB
70 to 75 dB
> 75 dB
Windsor Station
Planning Area
Creek
SMART Rail Line
Station Area
1/2 Mile Radius
Starr Creek
HIGHWAY 101
OLD REDWOOD HWY
WINDSOR RD
COMMONS CT
HOWARD DR
BERWYN WAY
Civic Center
& Library
Town
Green
PARK GLEN DR
OAK PARK ST
WILD OAK DR
WINDSOR AVE
MCCLELLAND DR
MARKET ST
RICHARDSON
WINDSOR RIVER RD
JOHNSON ST
CONDE LN
WALL ST
SMART RAIL
BELL RD
Keiser Park
DUNCAN DR
GINNY DR
Windsor Creek
Elementary
School
OAKFIELD LN
East Windsor Creek
OLD OAK RD
Windsor High School
Windsor Creek
101
0 200 400 800
Feet
Source: Town of Windsor, 2010;
Sonoma County, 2010;
Dyett & Bhatia, 2010.

Figure 5-2:
Proposed Plan
Noise Contours (2035)



5.2 BIOLOGICAL RESOURCES

The Planning Area is mostly urbanized, containing primarily developed residential, commercial, and public uses. For most areas not covered with impermeable surfaces, such as buildings and roadways, the vegetative community consists primarily of non-native grassland and landscaping.

Special Status Species

Special status species found in the Planning Area are shown in Figure 5-3 and are described below.

California Linderiella

California linderiella, a species of fairy shrimp native to California, has been found in the southeastern portion of the Planning Area, just south of the Windsor Creek Elementary School and adjacent to the Windsor Creekside Village. It tends to live in large, fairly clear vernal pools and lakes, though it has also been found in turbid water and in very small ponds. California linderiella are identified on the Special Animals List with the California Department of Fish and Game.

California Tiger Salamander (Ambystoma Californiense)

The California Tiger Salamander (CTS) is an amphibian in the family *Ambystomatidae*. It is a large, stocky, terrestrial salamander with a broad, rounded snout. Adult males are about 20 centimeters long and females are a little less than 18 centimeters long. Its habitat includes holes in the ground in oak woodlands, where it lives eight months of the year. The CTS breeds only in wetlands. The Sonoma County population is identified as threatened, and is a candidate for endangered status. The U.S Fish and Wildlife Service proposed 74,223 acres of the Santa Rosa Plain as critical habitat for the Sonoma County population of the CTS. The proposed critical habitat for CTS as it relates to the Planning Area is shown on Figure 5-3.

Narrow-Anthered California Brodiaea

The Narrow-Anthered California Brodiaea, is a perennial herb that is native to California, is endemic (limited) to California, and is found throughout the Planning Area. It is identified on the Special Vascular Plants, Bryophytes, and Lichens List with the California Department of Fish and Game.

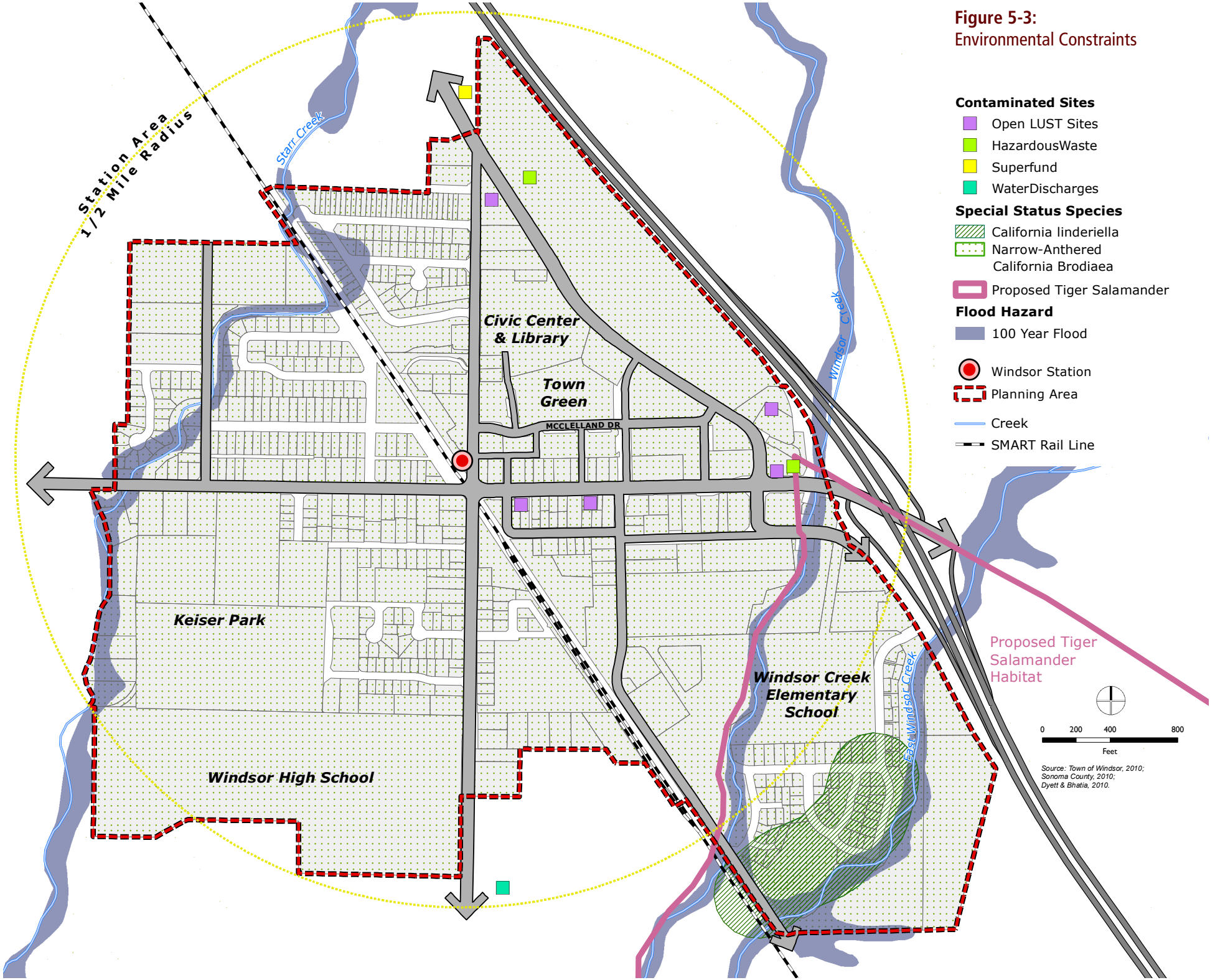
Burke's Goldfields

Burke's goldfields (*Lasthenia burkei*) is not found within the Planning Area, but can be found within a quarter-mile outside the Planning Area. Burke's goldfields is a small, slender annual herb in the sunflower family. This vernal pool species is found in the southern portions of Lake and Mendocino counties and northeastern Sonoma County. It was listed as endangered by the California Department of Fish and Game in September 1997 and the California Native Plant Society has identified it as rare or endangered throughout its range.

Oak Trees

Trees function to enhance both the natural and designed landscape and provide a variety of functions that promote health, safety, and the general welfare of residents. The Windsor Zoning Ordinance intends to maintain optimum tree cover by achieving no net loss of the tree canopy cover of protected tree species. Within the Downtown core there are several preserved heritage oak sites, which add a sense of history and character to the area.

Figure 5-3:
Environmental Constraints









Biological resources including oak groves and creeks not only provide habitat areas, but also help define Windsor's identity.

GOALS AND POLICIES

Goal EQ-B: Protect and improve the quality of biological resources and habitat areas.

There are remaining areas supporting vestiges of the pre-development native vegetation, mainly within creek rights-of-way, preserved heritage oak sites, and on vacant properties. Seasonal wetlands, non-wetland waters, drainage ditches, creeks (Starr, Windsor, and East Windsor creeks), oak woodland, riparian woodland, and native and ornamental trees can be found throughout the Planning Area.[1] The following polices aim to protect and improve the quality of these resources.

EQ-4 Establish a minimum 30-foot buffer from all creek edges and restrict new development within the buffer. Expand the buffer edge in areas where the Town determines there is high biological value. Where feasible, allow public access in the form of open space or a multi-use trail within the creek edge buffer, and incorporate interpretive signage for educational purposes in public access areas along creeks.

EQ-5 Encourage new development to face creeks and streams and to promote public access to creeks, consistent with General Plan Policies C.2.2 and C.2.3. Further, consistent with the Town Zoning Ordinance, public access and visibility to creeks should be provided through roads adjacent to creeks, but outside of the creek setback.

EQ-6 Require new development to preserve trees identified in Chapter 27.36 of the Town Zoning Ordinance and restrict pavement and other encroachment within the Tree Protection Zone to ensure long-term survival. Any tree removal shall be consistent with the Tree Mitigation requirements of Chapter 27.36.

EQ-7 Design pedestrian and vehicle bridges proposed to cross Windsor Creek to span the bed and bank of the creek and avoid or minimize bridge piers or footings within the creek, within bridge safety limits.

EQ-8 Ensure that development within the California Tiger Salamander critical habitat (shown in Figure 5-3) is consistent with the Santa Rosa Plain Conservation Strategy.

EQ-9 Require that new development proposed for any parcel that may include habitat that supports a special-status species with a moderate or greater potential to exist in the Planning Area to inventory sensitive resources, and to develop adequate measures to avoid or mitigate those impacts. The inventory must be conducted by an independent, qualified biologist, and follow guidelines established for federally-listed species. If special-status species are identified, an avoidance strategy must be pursued where feasible.

1 *Redevelopment Agency of the Town of Windsor, Windsor Redevelopment Project Proposed Fifth Amendment Draft EIR, December 2009.*

5.3 HAZARDS AND FLOODING

The Plan, similar to other urban infill and redevelopment plans, must address the public health risks associated with hazardous materials and toxic air contaminants, as well as the risk of flooding. This section describes these hazards and includes policies designed to reduce the potential risks associated with Plan buildout.

Contaminated Sites

Hazardous materials are substances with physical or chemical properties that pose an existing or potential future hazard to human health or the environment when improperly handled, disposed, or otherwise managed. Hazardous materials and wastes are extensively regulated by federal, State, regional, and local agencies. Several opportunity sites in the Planning Area face challenges associated with previous uses on the sites, some of which have resulted in contamination that must be cleaned up before new uses can be developed.

The Planning Area includes several contaminated sites, as shown in Figure 5-3 and detailed in Table 5-1. Sites monitored by the US Environmental Protection Agency are also shown on Figure 5-3 and listed in Table 5-1, including superfund, hazardous waste, and water discharge sites. These sites may be subject to use restrictions or warrant additional attention and clean up in case future use change is contemplated. Project-specific investigations will be necessary for projects on or adjacent to these sites to ensure that potential health risks are fully addressed.

Flooding

The floodways of the three creeks in the Planning Area are within the 100 year flood zone (areas subject to inundation by the one percent annual chance flood event), as shown in Figure 5-3. In addition, the Warm Springs Dam, located 12 miles west of Healdsburg, could cause widespread flooding in the Town in the event of dam failure. The entire Planning Area would be inundated except the higher ground above 100 feet in elevation. According to the Sonoma County Dam Failure Evacuation Plan for this area, flood waters would reach Windsor within one to two hours following the event. This would allow sufficient time for emergency evacuation of the Town.[2]

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may cause or increase mortality or serious illness, or that may pose a present or potential hazard to human health, and are linked to both short-term (acute) or long-term (chronic and/or carcinogenic) adverse human health effects. A

2 *Redevelopment Agency of the Town of Windsor, Windsor Redevelopment Project Proposed Fifth Amendment Draft EIR, December 2009.*







Hazards in the Planning Area include contaminated sites (top and middle) and flooding risk along creek floodways (bottom).

TABLE 5-1: CONTAMINATED SITES IN THE PLANNING AREA

Site Name	Address	Type	Description
Circle K Store (Former)	290 Windsor River Rd	LUST Open - Site Assessment	In 1987, three 8,000-gallon USTs were removed from the site. Soil samples collected from beneath the USTs during closure activities indicated the presence of petroleum hydrocarbons. An investigation to determine the extent of petroleum hydrocarbons in the subsurface was required by the SCDHS. Between 1987 and 1994, 14 monitoring wells were installed. In 1997, groundwater and soil vapor remediation was initiated at the site. Remediation efforts include groundwater extraction and the installation of a spray aeration and vapor extraction (SAVE) system. Potential contaminants of concern include: gasoline. Potential to affect aquifer used for drinking water supply.
Banks Property	340 Windsor River Rd	LUST Open - Site Assessment	Two 1,000-gallon USTs were removed from the site in 1992. In 1995 and 1996 the former tank area was over-excavated. A 350-gallon waste oil tank was discovered during the excavation activities. The site was investigated from 2000-2008 when a feasibility study/corrective action plan was prepared. Potential contaminants of concern include: gasoline. Potential to affect aquifer used for drinking water supply.
Shell Service Station	9033 Old Redwood Hwy	LUST Open - Remediation; Hazardous Waste	Potential contaminants of concern include: diesel, gasoline, waste oil/motor/hydraulic/lubricating. Potential to affect aquifer used for drinking water supply.
Windsor Chevron	9120 Old Redwood Hwy	LUST Open - Remediation	UST removal and replacement occurred in 1991 and 1995. Approximately 4,000 cubic yards of impacted soil was excavated and disposed of in 1995. Approximately 250,000 gallons of groundwater and stormwater run-off were pumped from the excavation. The current remediation system was started on October 7, 2008, and consists of soil vapor extraction, air sparge and groundwater treatment system. Potential contaminants of concern include: gasoline, waste oil/motor/hydraulic/lubricating. Potential to affect well used for drinking water supply.
Windsor Fuel	9600 Windsor Road and 9600 Old Redwood Hwy	LUST Open - Site Assessment; Superfund; DTSC clean-up site	Active fuel distributor. Multiple USTs removed. Several active aboveground storage tanks. Soil and groundwater impacted with heavy weight petroleum hydrocarbons. Extent of contamination defined. Plume does not appear to be migrating. Final corrective action plan needed to address remaining soil and groundwater contamination. Potential contaminants of concern include: diesel, waste oil/motor/hydraulic /lubricating. Potential to affect aquifer used for drinking water supply. Associated DTSC clean-up site.
Jinkens J J Trucking Co	9513 Raintree Ct	Hazardous Waste	This site is a transporter of hazardous wastes. At this site, there is currently insufficient information to determine whether human exposures are under control or to determine whether migration of contaminated groundwater is under control.
Windsor Wastewater Treatment, Reclamation and Disposal Facility	8400 Windsor Rd	Water Discharges	n/a.

Source: Dyett & Bhatia, 2010; State Water Resources Control Board, 2010; Department of Toxic Substances Control, 2010; US Environmental Protection Agency, 2010.

challenge for the Plan is to ensure adequate buffers between sensitive receptors and existing and potential sources of TACs.

A significant, common source of TACs is on-road motor vehicles, such as trucks and cars (mobile sources). The Bay Area Air Quality Management District (BAAQMD) advises that special overlay zones be established identifying a 500 foot buffer around all freeways and high-volume roadways, which would impact the Planning Area along Highway 101, as shown in Figure 5-4. In addition, there are five stationary sources of TACs in the Planning Area, shown on Figure 5-4 and in Table 5-2. Buffers around stationary sources indicate the distance from the source at which the cancer risk falls below the threshold established by the BAAQMD.

TABLE 5-2: STATIONARY SOURCES OF TACS IN OR ADJACENT TO THE PLANNING AREA

Plant	Facility Name	Source Type	Street	Cancer Risk Threshold: 10 in a million	PM2.5 Threshold: 0.3	Buffer	Adjusted Cancer Risk (in a million)
14523	Town of Windsor	1 Deer Creek Sewer Lift Standby Generator	809 Windsor River Rd	0	0	n/a	n/a
G5100	Windsor Chevron	Gas dispensing facility	9120 Old Redwood Hwy	84.296	na	279 ft	9.61
G9861 (12298)	Windsor Shell	Gas dispensing facility	9033 Old Redwood Hwy	105.371	na	328 ft	9.27
1236	Town of Windsor	4 Diesel BUGs, 25 misc waste water treatment sources	8400 Windsor Road	116.29	0.206	1,000 ft	n/a
G8325	Windsor Water District	Gas Dispensing Facility	8400 Windsor Road	n/a	n/a	n/a	n/a

Source: BAAQMD, 2011.







Policies aim to protect sensitive receptors, including residential uses and schools, and to ensure projects are not exposed to flooding.

GOALS AND POLICIES

Goal EQ-C: Ensure that the exposure of new development in the Planning Area to hazards is minimized.

Due to the presence of hazardous sites, toxic air contaminants, and flood-prone sites within the Planning Area, certain sites within the Planning Area will require careful assessment to ensure that potential health risks are fully addressed.

EQ-10 Require remediation and clean up of contaminated sites in the Planning Area, in accordance with federal and State standards. Require documentation of the site investigation and cleanup be submitted to Town staff during project review.

EQ-11 Require new residential projects and other new sensitive receptors such as schools, daycares, nursing and retirement homes located within 500 feet of Highway 101 to install indoor air quality equipment, such as high-efficiency particulate air filters (HEPA filters) or equivalent mechanisms to minimize health risks for future residents.

EQ-12 Require proponents of projects within identified high risk Overlay Zones surrounding existing hazardous sites, roadways, or TAC sources, as shown in Figure 5-4, to assess health risks at the location in question, and to incorporate feasible design-related risk mitigation measures, such as high-efficiency particulate air filters (HEPA filters) or equivalent indoor air quality equipment mechanisms, as appropriate. Require that documentation of assessment be submitted to Town staff prior to issuance of development permits.

EQ-13 Ensure new projects within the 100 year flood zone are designed to reduce flood risk. Strategies include site planning to minimize flood risk and applying flood safe standards to new construction.

EQ-14 For all new development, require that a preliminary soils report in accordance with the Town's Grading Ordinance is prepared and submitted to the Town, consistent with the requirements set forth in the Town's Municipal Code, Title XVI, Chapter 8, Article 4.

EQ-15 Require new large commercial projects to prepare a loading plan aimed to minimize truck idling and reduce diesel particulate emissions related to truck loading.

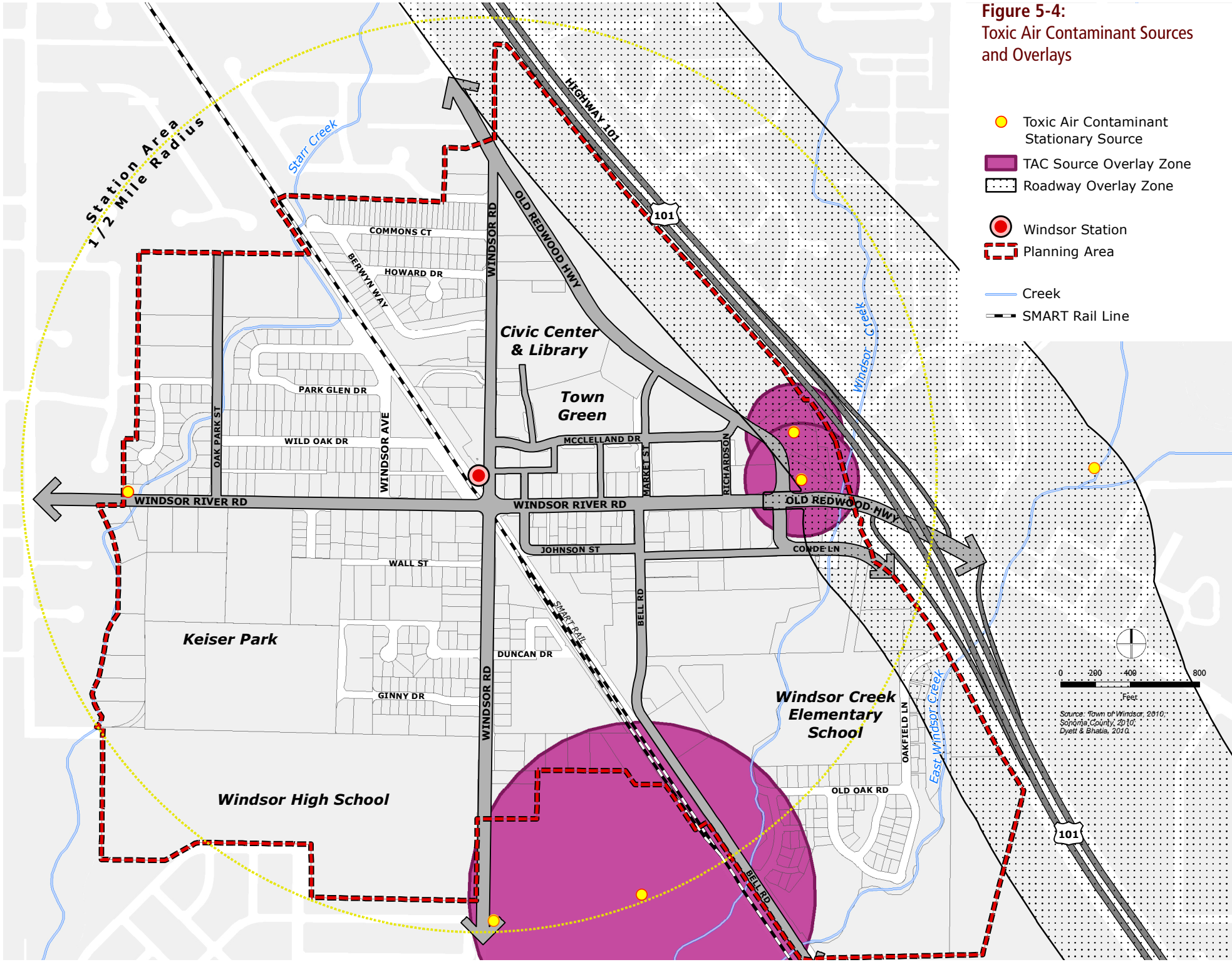


Figure 5-4:
Toxic Air Contaminant Sources and Overlays

EQ-16 Require construction mitigation measures for all proposed projects, such as the following measure recommended by the BAAQMD as applicable:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.