

# Acton Night Sky Ordinance



## Existing Conditions

The Antelope Valley Plan includes a policy about the aesthetics and amount of streetlights. Cal Poly students presented a poster at the community outreach event outlining the purpose and design of streetlights in Acton. The students received a resounding opposition to more street lights in Acton, as well as a redesign or reduction of current streetlights.

Many areas of the United States have restrictions on outdoor lighting on private property and new developments. Our society has advanced from candles to oil lamps to gas lighting to electric lighting, and now LED lighting,. The amount of light we produce has increased with population growth and urbanization. One can see, simply by observing cities out of a plane window, that there is a correlation between population and the amount of light. Acton wants to maintain their small-town feel and minimize population increase and urbanization. A night sky ordinance could offer a solution to the community that both maintains the rural character, but also reflects the community's request for fewer and better designed streetlights.

## **Proposed Solution**

A night sky ordinance is a policy to help reduce the amount of light pollution, created by a jurisdiction or town. Compliance with the ordinance helps to regulate outdoor lighting through comprehensive lighting standards. Acton is a suitable city for a Night Sky Ordinance because dark sky measures help reduce urbanization and tourism, two goals Acton residents have expressed in public engagement activities. Acton could fully embrace its rural character through a night sky ordinance and become an officially recognized city under the International Dark Sky Association if desired.

First, it is important to identify what types of light pollution exist in Acton and can thus be mitigated. The International Dark Sky Association released a document titled “Dark Sky Planning,” and this document outlines the four main types of light pollution that can be mitigated in Acton. These include:

1. Light Trespass: When light falls where it is not needed.
2. Glare: Intense, unnecessary light.
3. Clutter: An excessive grouping of light sources.
4. Skyglow: A culmination of the mentioned effects in brightening the night sky over inhabited areas.

A night sky ordinance includes implementing measures to address these factors of each light pollution level. These solutions include but are not limited to:

- A removal of excessive clustering of streetlights in Acton
- Replacement of street light heads with a direct light downwards at the lowest light intensity while still abiding by local code.
- Limiting residential, private outdoor lighting to shielded light fixtures and minimum interference with neighboring properties through lighting setback requirements.
- Enacting requirements for proper coloring of lighting and a maximum temperature of 3000 K.

## Visuals of Implementation Measures

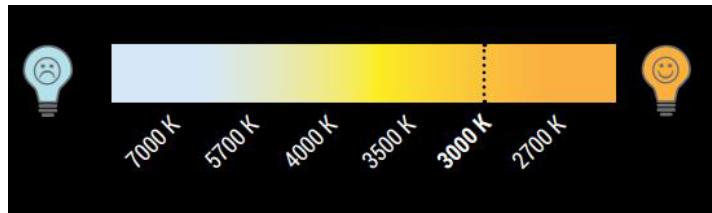


Figure 1: Graphic showing different colors of lighting. A night sky ordinance would motivate coloring of lighting to be maximum 3000 K.

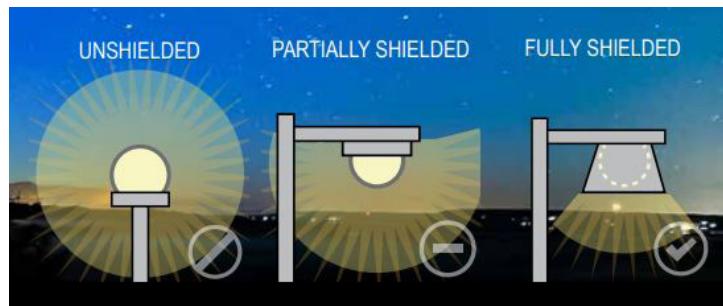


Figure 3: Graphic shows examples of unshielded lights and fully shielded lights to show the affects of different light fixtures on skyglow, light trespassing, and glare.



Figure 2: Examples of night sky light fixtures that would mitigate glare and light trespassing:



Figure 4: Photo shows example of how glare and strong light fixtures may actually decrease safety.

The night sky ordinance would focus on a relationship and proximity approach. This means the type of lighting and the amount of lighting is based on the proximity to a particular area such as a park, a parking lot, or a private residence. The proximity approach distinguishes different types of zones for lighting requirements. The three types of zones that apply to Acton and conform to the rural character goal include:

Zone 1: No ambient lighting or installed streetlights. This includes areas that do not require light for the function of activities and rather focuses on the natural environment.

Zone 2: Moderate ambient lighting and streetlights. This zone includes areas where lighting is necessary for safety and directional purposes and where there is a moderate to high flow of pedestrians and equestrians.

Zone 3: Moderately high ambient lighting. This zone includes areas in which streetlights and parking lot lights are needed for commercial parking and businesses. These areas are typically away from residential and private residences and mainly serve a safety and convenience purpose.



Figure 5: Map depicts current streetlights depicted in Acton from the Los Angeles County GIS hub. This may be useful for identifying areas of cluster and light trespassing.

A town that has shown success from the implementation of a Night Sky Ordinance is the town of Torrey in Utah. The population of Torrey was 316 in 2019 and the town is known for Capitol Reef National Park as it is the gateway into the park. Since January 12, 2018, the town of Torrey has been an international Dark Sky Community, and Utah's first.

The push to reduce excessive artificial light in Torrey can be attributed to the town's panoramic view of the stars and the sky that surround Capitol Reef National Park. A resident pointed out and raised opposition to the light pollution that the small town was creating and its harmful impacts.

A key point that was raised by the residents in opposition was how much money the town would save each year by remodeling the structure of their lighting. In 2017 the town replaced the old high pressure sodium street lights with new warm white LED lights. These new LED lights pointed illumination towards the roads instead of up towards the sky. The town of Torrey continues to maintain its International Dark Sky Community title through continued education and awareness of the impacts of artificial light and through ongoing new programs.

The Town of Torrey leads as a perfect example of a resident started movement and a small town's commitment to preserving the beauty of the town for its residents.

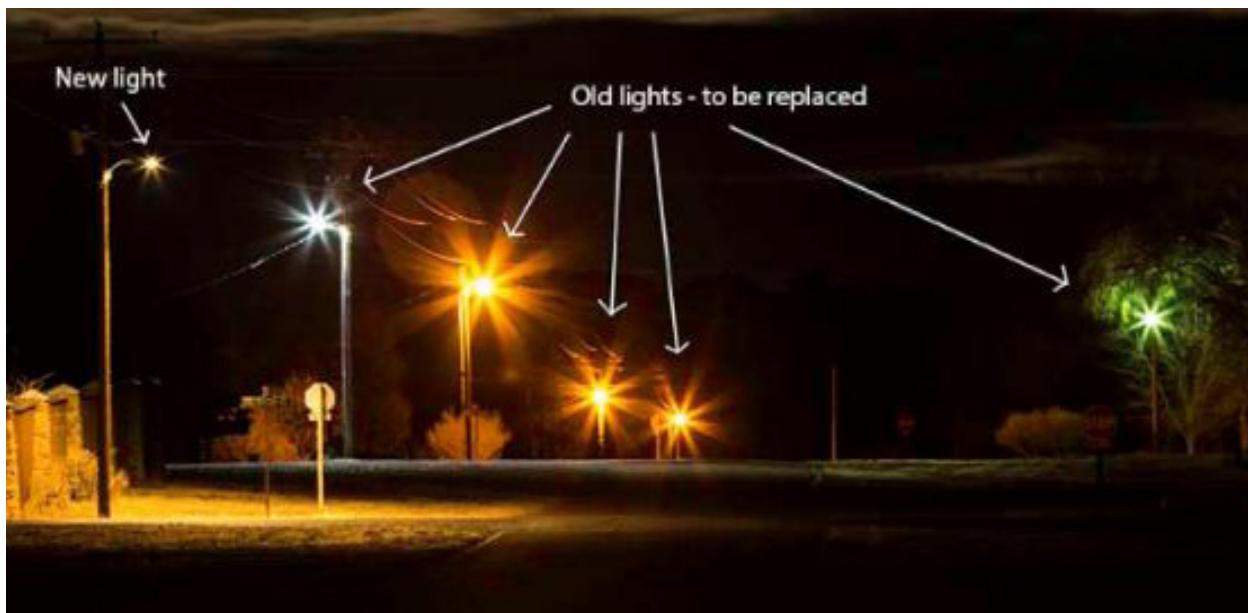


Figure 6: Picture of Torrey, Utah's light remediation measures and how the light fixtures are slowly being replaced to preserve the small town feel, natural environment and night sky.

## **Bottom Line**

A night sky ordinance would reduce community safety. It would reduce excessive lighting, shield existing streetlights, and remove unnecessary street lights. A night sky ordinance would help preserve Acton's rural character.

## **Key Takeaways for Responsible Agencies**

### ***Regional Planning***

The Los Angeles County Planning Department is responsible for creating and implementing a night sky ordinance for Acton to adopt. The Planning department will create and outline the regulations that will be used to help reduce light pollution in Acton. These regulations will include large sections such as purpose, definitions, applicability, exemptions, and general requirements. The regulations will also discuss smaller details such as energy conservation details and signs. Through policy, this preservation of the rural character of Acton can be achieved.

### ***Public Works***

The Los Angeles County Public Works Department is responsible for implementing the ordinance by regulating new light fixtures and likely replacing existing lighting structures if needed.

### ***Parks & Recreation***

It is important that the department of Parks and Recreation work in harmony with the other departments to assure that recreational uses in Acton, such as sports and athletic fields and facilities, parks, and open space trail lighting infrastructure do not negatively add to the artificial lighting pollution.

# Minimizing Conflicts on Acton's Trails



## Background Information

Since its founding, the Acton community has enjoyed the pleasures of being undeveloped and unurbanized. When visiting the community, it is clear that this still remains the goal, and that members of the community take advantage of the wide open spaces, lack of gates, and lack of restricted property access. As a result, horse riders have been able to freely roam from their homes to trailheads, most of the time with little in their way, and most importantly not trailering horses to trailheads. One downside to this lack of development, is that OHVs see the lack of fences as having the same potentialWithout clear obstacles or legal constraints, OHV users will actively take advantage of relaxed regulations and neglect laws that prevent them from traveling on public roads. Additionally, without clear trespassing distinctions, fences, gates, and other physical barriers, OHV access won't be affected.

For example, in an unposted, ungated private property, there is little legal repercussion for an OHV accessing the space, further allowing the use.

## Potential Solutions

The County should establish a link between Acton and the Rowher Flat OHV Park which is about 10 miles away. This could be accomplished by providing a linkage off of Sierra Highway just West of Acton. Though it is not likely, this is one potential way to reduce the presence of motorcycles around the overall community and instead concentrate them to one local OHV park. In addition to this, the OHV park poses certain regulations that the riders may feel the need to follow, such as spark arrestors, proper registration practices, and reducing illegal modifications(such as louder exhaust systems). All of these factors could ultimately help relieve some of the issues that the Acton community is currently seeing, while also keeping the off-roading community happy.

Another potential solution is the introduction of trail right of way signage, as the usage of mountain bikers and horses will ultimately have to work together. Over time, it seems that horse riding is trending towards an overall decrease due to other overwhelming uses. In order to prevent this, the community could instead work to generate widespread signage that helps to increase safer interactions on the trail. Additionally, in downhill areas that are known for fast approaching mountain bikers, large water bars and signage near blind corners could be established to help slow cyclists.

For example, in San Luis Obispo, there are some trail networks that only allow one use and others that allow many. Of these uses, each space has created different regulations, some offering themselves to horses, hikers, and mountain bikers collectively, while others offer only to one use. When only one use is allowed, it is visibly displayed what is allowed and is not.

In situations where multiple uses are allowed, trail courtesy signs, like the one shown on the following page, are an excellent example of how to help multiple uses work together. This could start a conversation about trail usage, and the community can work to educate cyclists about the dangers of spooking horses and the negative impacts that it can have on everyone involved.

# Bottom Line

One alternative to the issue of OHV uses could be working to establish clear access standards across all of the trail networks and easements, so that they can be legally disciplined across the community. Without clear legal deterrents, OHV access will not be prevented. Another option is the establishment of clear boundaries that cannot be crossed by OHVs but can be crossed by horses. Examples of these are gates, narrow access points, and other physical barriers that prevent OHV access (shown below on the left).

Another key issue that other communities have learned to deal with is the right of way of horse, mountain bikers, and hikers, as this can help to alleviate dangerous interactions. In cases such as San Luis Obispo, horse riders work to avoid trail areas that are known for having conflicts with mountain bikers and instead frequent wider fire roads and other well known safe trail sections.



# Key Takeaways for Responsible Agencies

## *Regional Planning*

Regional Planning will have to implement a trail system in order to provide access to the OHV park.

## **Public Works**

Public works should work to regulate the usage of motorcycles accessing trails via public roads with the coordination of law enforcement. Local law enforcement will have to enforce restrictions on OHV vehicles to deter them from using the public trails. Additionally, the city should promote use of the local OHV areas such as Rowher Flat OHV Park, which is about 10 miles away from Acton.

## **Parks & Recreation**

Parks and Recreation could implement a OHV community day to help promote usage of the Rowher Flat OHV Park. A trail with adequate signage should also be implemented from Acton to the start of Rowher OHV Park. This will help encourage OHV users to use the proper areas instead of using the public trails.

# Land Use



## Background Information

Acton does not have a strong voice in the County's project review process. The proposed tool would carefully review new development and set specific limitations on new development.

This oversight mechanism is currently lacking. Additionally, adopted land use and zoning documents, including the Acton Community Standards District policy document, fails to mention the topic of rural character and the Los Angeles County Zoning Code is too broad to address Acton's unique and specific land use needs. Clearly existing planning documents fail to involve Acton in the project review process at the level needed to maintain review authority to preserve rural character.

*Acton must develop land-use policies and a proper flow chart to adopt land use and zoning documents.*

## Purpose and Solution

The purpose of the proposed tool would preserve the rural character of the community by providing additional oversight and review authority during the project review process (reference appendix A).

This would amend Chapter 22.302 (Acton's CSD) of the Los Angeles County Code (County Code) to include an allowed land use and permit requirement table listing all permissible uses and use-related permits for rural commercial zones (C-R). The goal of identifying these allowable uses and establishing permit requirements for rural commercial zones(C-R) is to streamline more local, compatible, and neighborhood/service uses while protecting the rural character of Acton.

The allowed land use and permit requirement table also addresses and informs town officials of any additional infrastructure, streetlights, loopholes desired development would have through the permitting process. Town officials will then have more oversight and could anticipate any additional infrastructure development before the build out process begins.

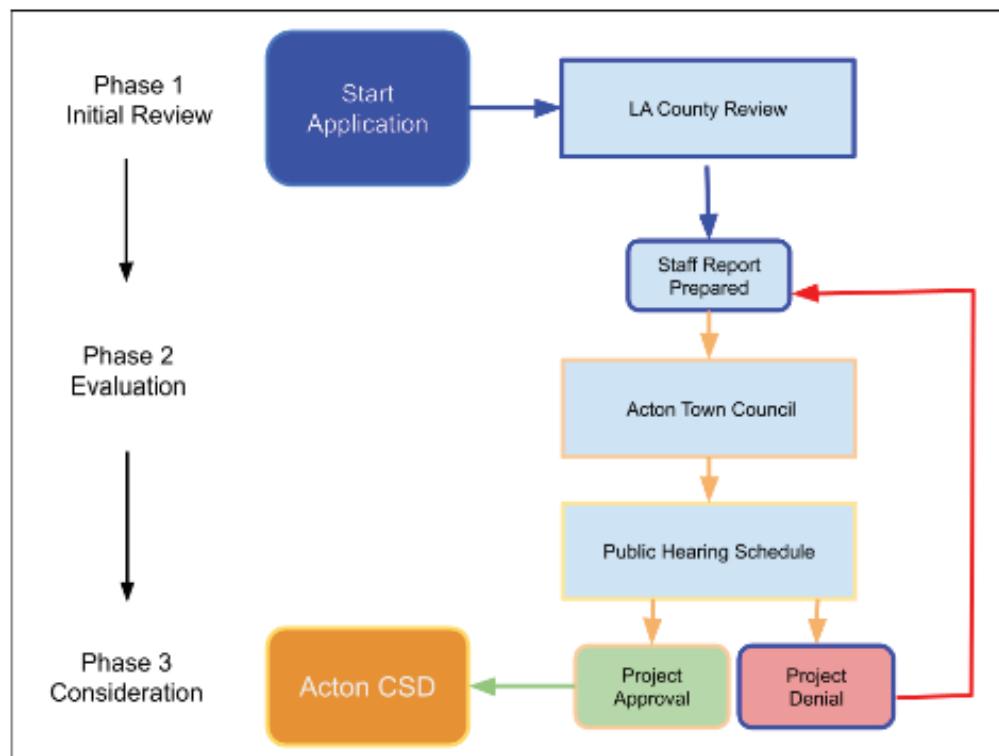


Figure 1: Acton Town Council Input during Application Process (Flow Chart)

All retail-related uses in Acton should be subject to a conditional use permit to allow for further review of proposed projects to maintain Acton's rural character. In contrast, within Los Angeles County's Rural Zone retail/commercial uses may be permitted through a "ministerial site plan review" (Los Angeles County Zoning Code).

**Table 1. Land Use Regulations for Rural Commercial Zones (C-R) for Acton.**

Examples Uses	LA County Current Permit or Review Requirement	Acton CSD Recommended Permit or Review Requirement
Alcoholic beverage sales, for off-site consumption	CUP	CUP
Retail stores	SPR	CUP
Grocery stores	SPR	CUP
Feed and grain sales	SPR	CUP

Abbreviations:

CUP - Conditional-Use Permit (for more information see *Los Angeles County Municipal Code Chapter 22.158*).

SPR - Ministerial Site Plan Review (for more information see *Los Angeles County Municipal Code Chapter 22.186*).

Table 1: Land Use Regulations for Rural Commercial Zones (C-R) for Acton.

## Community Input

Community members at the Acton Community Open House on February 12th mentioned Acton should have more local control over land use. The community approved the proposal to amend Acton's Community Standard District to include a land use and permit requirement table for the rural commercial zone.

Community members were both interested and concerned about the process of amending a land-use regulation and how they could participate before and during the process. The residents wanted to make sure they were involved in the process. Community members also wanted to know how the Conditional Use Permit functions.

The residents wanted to be informed about the new projects being proposed in their community. Community members were also interested in keeping developers accountable to following the CSD procedure. They wanted to make sure there are enforcement mechanisms in place to make sure the CSD and specifically the land use and permit requirement table is followed. The last general concern community members were interested in was the additional cost of the proposal. They wanted to know if the amendment would increase staff time for the town council.



Figure 2: Community Open House Event at Acton Community Club

## **Relevant Studies**

### **Community Standards District (CSD)**

Acton currently has a Community Standards District (CSDs) established to protect and enhance the rural, equestrian, and agricultural character of the community. Within Acton's CSDs there's 3 categories of regulations that have helped Acton maintain the community's lifestyle. These categories are community-wide development standards, zone-specific development standards, and area-specific development standards.

These standards are intended to ensure reasonable access to public riding and hiking trails, and to minimize the need for installation of infrastructure such as swerers, streetlights, concrete sidewalks, and concrete flood control systems that would alter the community's character, while providing for adequate drainage and other community safety features (Acton Community Standards District, 2019). These standards have strongly worked in preserving the rural character/ equestrian lifestyle in Acton.

By researching the performance of the current CSD's standards, it is evident CSDs are a successful regulatory tool unincorporated towns can use to have more local control. From its inception back in the Summer of 1989, when Leona Valley, the first community to enact a Community Standards District, CSD's have been vital in protecting rural lifestyle.

## **Bottum Line**

To preserve rural character in Acton and resolve community concerns, solutions must address land use and provide Acton with greater project review authority. The proposed solutions of implementing a new policy tool and to provide Acton greater authority in the review process are essential. Additionally, the community of Acton should partner with local and regional agencies, as this would encourage better engagement and ensure transparency across agencies.

The Land Use Amendment Program would preserve the rural character of the community by providing additional oversight and review authority to the Acton Town Council during the project review process. The Acton Town Council's new advisory role would strengthen local control.

The Los Angeles County Department of Regional Planning has a primary role ensuring the proposed solution gets implemented.

The proposed changes to improve Acton's rural character are unique, as Acton is a small, historic community which values its existing rural, equestrian lifestyle.

# Key Takeaways for Responsible Agencies

## *Regional Planning*

Determine whether new development within the Rural Commercial Zone is appropriately sized and appropriately located (Department of Community, Trade and Economic Development 1999).

Determine how much new development can the community allow without hurting its rural quality of life and determine what kinds of development are appropriate (Department of Community, Trade and Economic Development 1999).

Coordinate rural character planning with the annual budget to ensure implementation of the proposed solution.

Perceive rural character not just about place, but about a community and its people (Rural Character is about People and Community 2021).

Help employees deal with change in the workplace (Castrillon 2020).

Must be a review authority for new development and thoroughly involved in the development review process.

Must maintain a strong, active line of communication with the Acton Town Council.

## *Acton Town Council*

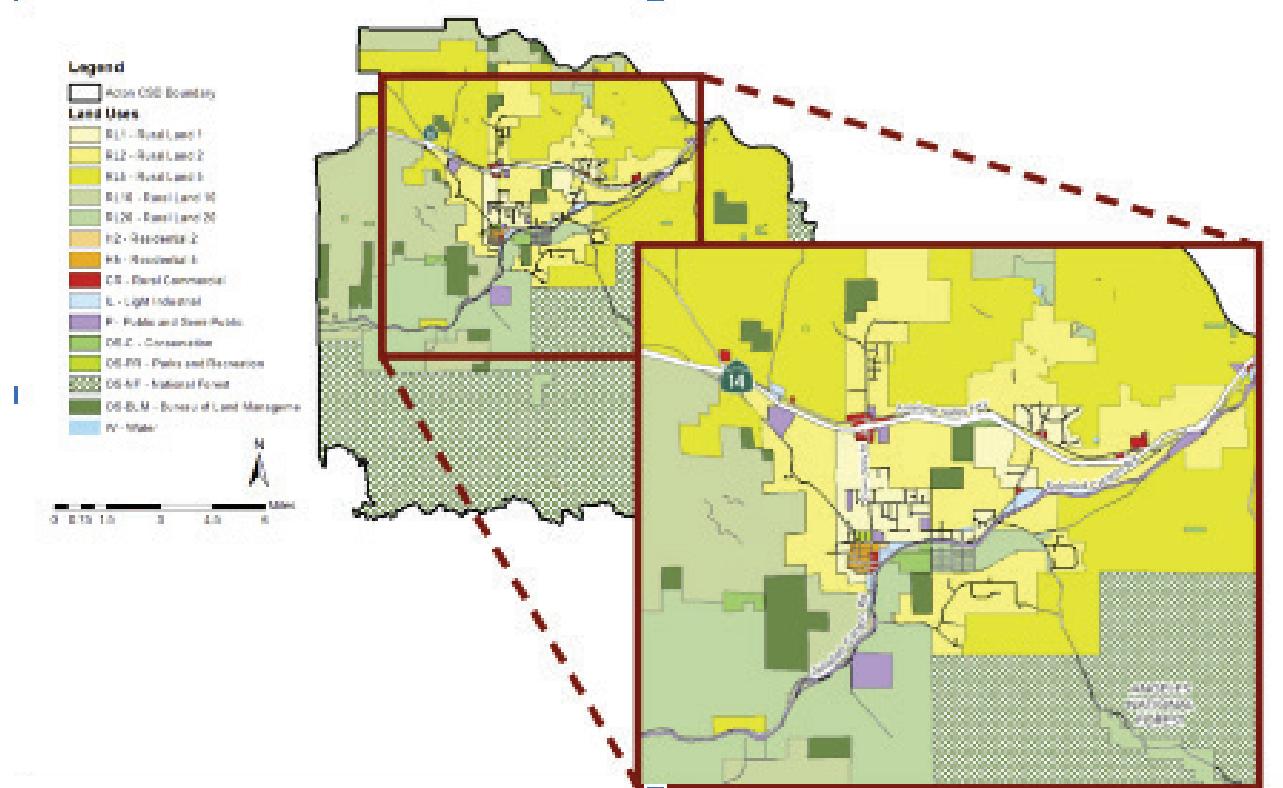
Must be a review authority for new development and thoroughly involved in the development review process.

Must maintain a strong, active line of communication with the Los Angeles County Department of Regional Planning.

Shall establish an advisory committee under Article 7 of the Acton Town Councils Bylaws to be responsible for the land use regulations by monitoring all matters that affect land use policies.

## Appendix 1

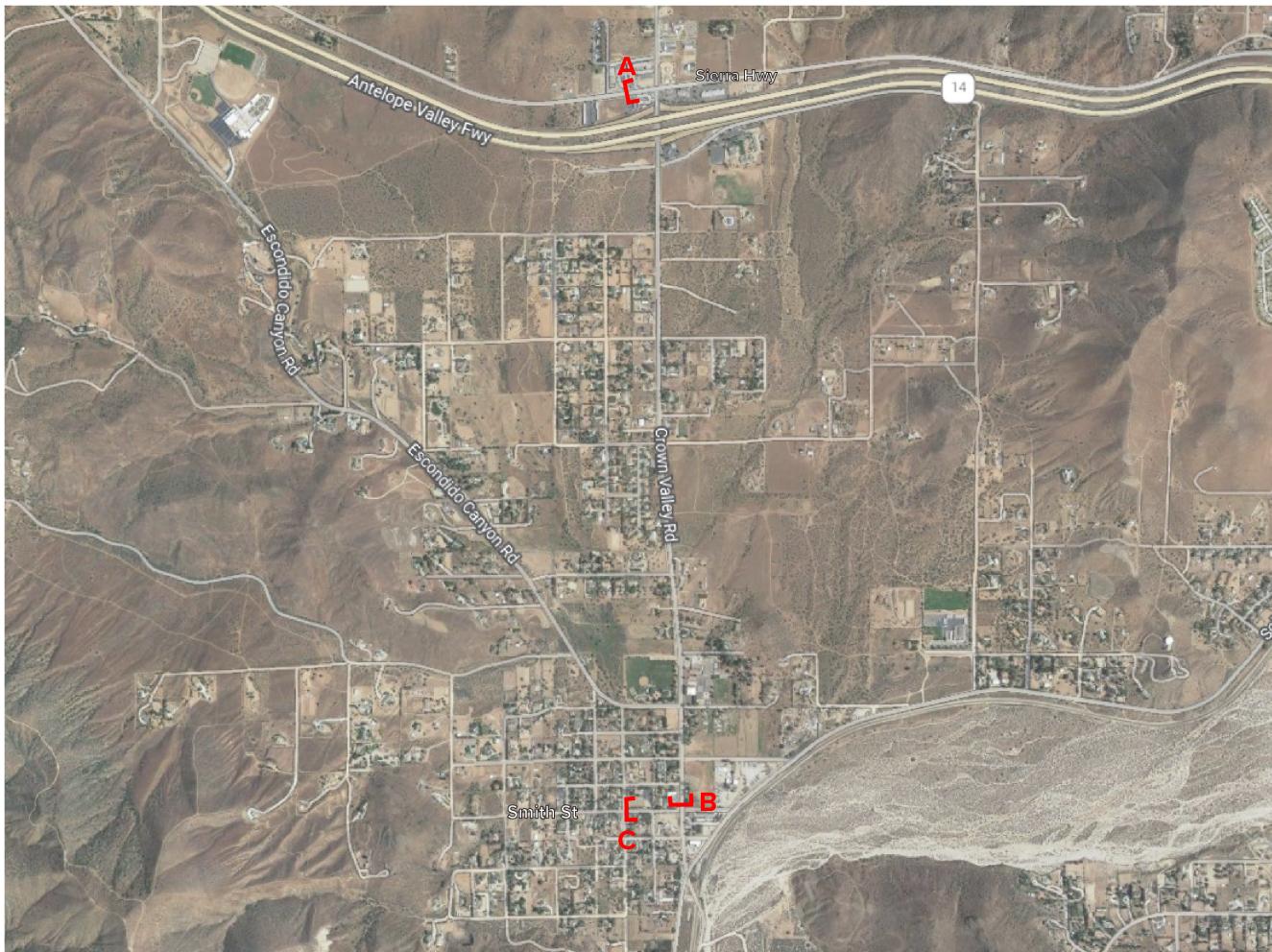
Land Use Map of Rural Commercial Zones (C-R) established in Acton Community Standard District (CSD).



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# Street Sections in Acton



## Introduction

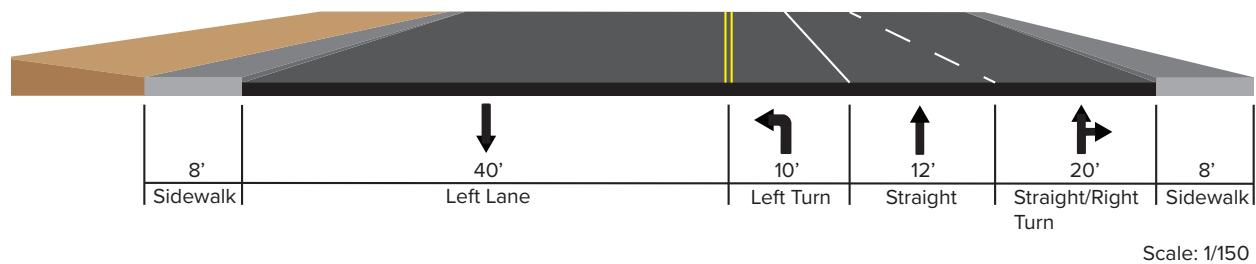
In order to create a trail network spanning both rural and urban areas, the types of streets present in Acton must first be examined and understood. Ranging from wide unmarked roads to small unpaved streets, many areas of Acton show promise in supporting a comprehensive trail network. This rural character policy examines existing conditions of streets in Acton and then applies established precedents to best support the creation of an equestrian trail or other modes of transit.

## Background

The general types of streets found in Acton can be described as wide, with dirt buffers acting as pseudo sidewalks. These streets can best be characterized as rural. In Acton too many of the streets are vehicular serving

only. Creating streets that can serve a variety of uses like equestrians, pedestrians, and bikes will allow for easier and safer transportation in the Acton area. Street sections are an important tool for visualizing and assessing existing and conceptual street designs in a given area. Understanding street types allows for assessment of the transportation uses in an area and aids in understanding how streets might need to change to better serve the community.

## Sierra Highway

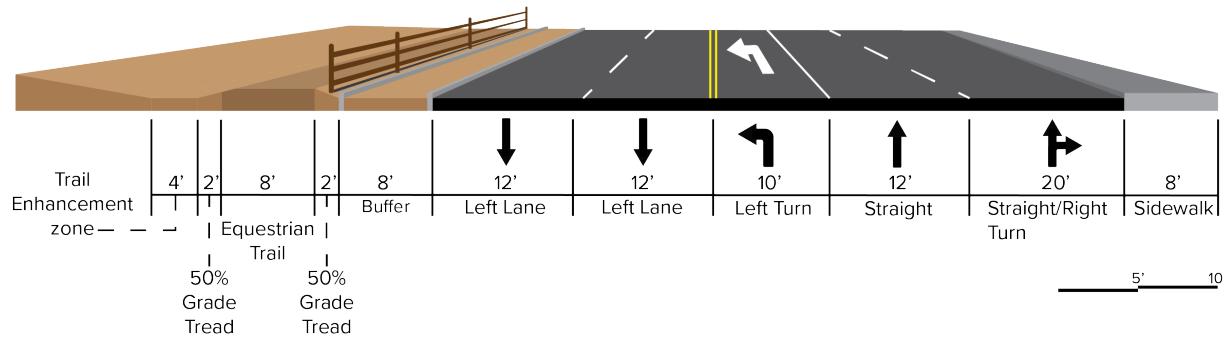


In the northern part of Acton, CA, the Sierra Highway runs parallel to the 14 Freeway. Since the Sierra Highway is located right off the freeway, it serves as an important spot for travelers commuting between Santa Clarita and Palmdale. In addition, the area also serves as a link for the residents since it connects the main part of town to the northern section where the Acton Agua Dulce Library is. This section of the Sierra Highway is a street that is centered around vehicle usage. As a result, it has wide lanes for automobiles and lacks space for other modes of transportation. Since it is an important junction, other modes of transportation need to have a connection to the other parts of the city as well.

The section diagram is located at the Sierra Highway and Crown Valley Road facing east. Including the sidewalk, the street is around 98 feet across. The westbound side only has one big lane. Going east, the right side of the road has a left turn lane, a lane going straight, and one that goes straight and right. Both sides of the sidewalk measure around eight feet. In terms of amenities on the sidewalks, there are a few along the street. On the north side, there are small trees planted along the sidewalk, but they do not provide much shade. The sidewalk is also covered by dirt from the plot of land that divides the sidewalk from a parking lot. The southern side is more developed since it serves as access to the Shell gas station. It has newspaper boxes and a fire hydrant. Looking at the street, cracks in the pavement are visible due to the constant exposure to the sun and weather.

Above the street, there are cobra head street lights that provide lighting at night so that people coming across the intersection will be able to see each other and avoid accidents.

## Sierra Highway Modified



Looking at Acton's Sierra Highway, the road's existing dimensions present the opportunity for an equestrian trail to be built with appropriate buffers and barriers. First, the large 40 feet wide oncoming lane was changed to two distinct 12 foot lanes. By providing clear lane markers, drivers in the road may be more inclined to a wide berth to horses traveling along the trail. The remaining 16 feet was then converted to an eight foot wide landscaping buffer, as well as the equestrian trail itself. Not only would the buffer identify the trail as a distinct entity compared to the opposing sidewalk, but also presents an opportunity for natural beautification including items in the buffer such as rocks, large trees, or small shrubs. Overall, landscaping should avoid being directly at rider height or adverse to horse health.



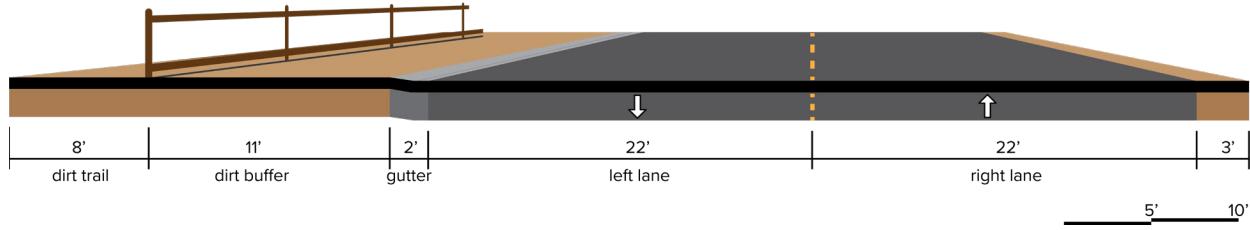
Directly adjacent to this landscaping buffer is a pole style fence, not only meant to serve as a barrier between riders and the buffer, but to serve as signage to pedestrians and automobile users. These styles of fences are commonplace all throughout Acton, and their increased usage would result in an identifiable trail network that connects Acton's horse owners to the amenities of the area.

For the design of the trail itself, a sloped tread with a 50% grade was placed located on either side of the main path with the intention to passively dissuade horses from straying from the trail. Horses naturally gravitate to traveling within 18 inches of the tread's edge, creating two distinct trod areas depending on their direction of travel. As such, the proposed width attempts to balance safety with comfort. Lastly, regarding the lack of cyclist amenities along the trail network, many equestrian stakeholders vocalized their propensity against sharing the trail network with fast moving bikes. Fearing that they would discomfort horses and overpopulate the trail, this section acknowledges that concern by not promoting cyclist travel.

## **Crown Valley Road**

This is a section looking north along Crown-Valley Road next to the New Acton Market. This section was chosen due to its location along Crown Valley Road, one of the main streets in Acton, as well as its proximity to core Acton resources such as the New Acton Market, the Original Acton Market, and the Acton Park.

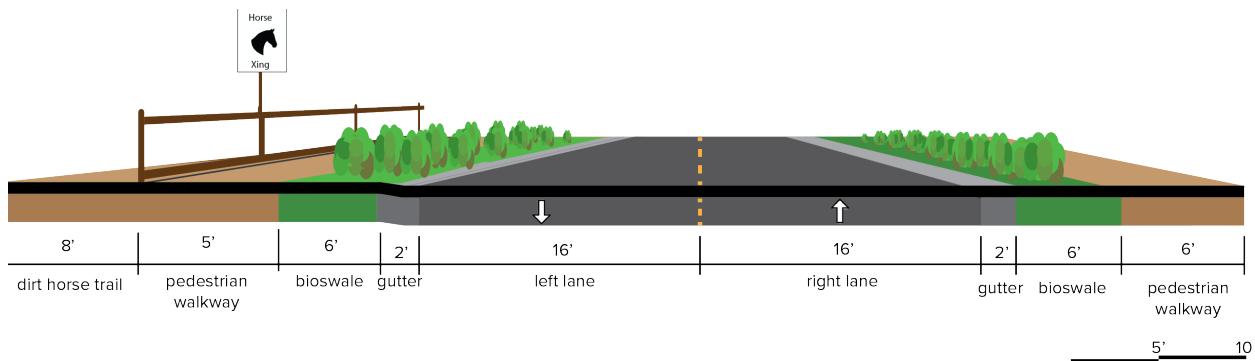




This portion of Crown Valley Road is also unique as it is one of the only locations that has a dirt trail that is separated from the street using some form of fencing. This dirt trail also is separated from the road by a dirt buffer of 11 feet. This fence and trail buffer only run the length of the New Acton Market and there are no traffic calming methods present at the street crossings that the trail leads to. While the fencing is a good step in creating a street environment that is acceptable for equestrian uses, there are no adequate connections to this trail segment, rendering it almost unusable for equestrians and pedestrians looking to commute along Crown Valley Road.

In terms of the road in this area, there is a standard two-laned road. Each lane measures 22 feet for a combined total of 44 feet across. The road is larger than a standard street found elsewhere in Acton, but the reason for this might be because the road serves large trucks and trailers in addition to cars. The road is paved with asphalt and has a cement gutter on the same side as the dirt trail to serve as drainage. The right side of this road section has a small dirt buffer before becoming private property. This small buffer is not big enough to be counted as a trail or a sidewalk for pedestrians.

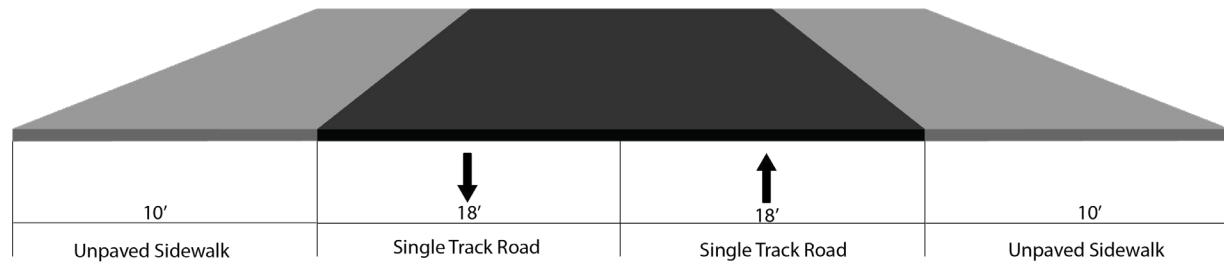
## Crown Valley Road Modified



The potential edits for the Crown Valley Road section are fairly comprehensive. In this hypothetical section, signage, additional trail space, and bioswales made up the majority of the additions. The most obvious changes visible would start with the width of the street lanes themselves. The existing lanes on Crown Valley Road are nearly twice the size of the average lane width, and because of this, they were thinned to create a larger space for horses, bicycles, and pedestrians. Specifically, with the additional 12 feet of space, the right hand side of the street section was able to add on a two foot buffer, three feet to its pedestrian walkway, and also include a six foot wide bioswale. On the left hand side, the 11 feet of dirt trail was thinned to five feet, in order to accommodate a six foot bioswale. Another addition made to this hypothetical street section is the posting of signage next to the dedicated horse lane, a feature that was and is a big want for the community.

These hypothetical changes of Crown Valley Road provide several potential benefits. One benefit is that the additional 11 feet created by thinning the lanes provides more space and creates a more pedestrian friendly area. Additionally, the added buffers can provide a feeling of safety because they provide a greater degree of separation between the walkway and street. When looking specifically at the bioswales, several benefits can be seen. One benefit of this is that they create a more aesthetically pleasing environment, but don't necessarily detract from the character of the region because they can include local flora to maintain a specific aesthetic. Another benefit of the inclusion of bioswales is that they are an environmentally friendly piece of infrastructure, due to the fact that they are used to protect local water sources, and reduce standing water, which can be an issue for horses due to the fact that standing water can attract mosquitos which are known to cause several horse-specific diseases.

## Smith Avenue



Scale: 1/86.4

This is southern part of Acton, CA, its section view of Smith Avenue that width of the avenue is approximately 36 feet. There is one lane without a line. It looks like an unpaved road like the sidewalk. It measures around 10 feet on both the left and right sides. The road's appearance suggests that the contractor took pavements into account. When opposed to the core parts of the road, the tarmacked sides of the road are lower. When Smith Avenue gets road markings, this view ensures that walkways will be available. Between 1,800.00 feet and 3,521.58 feet, commercial and industrial activities take place. For example, Acton Hardware, Artistic Beauty, New Action Market, and Acton Community Club are located on both sides of Smith Avenue. The biggest issue with the street section view is that most turning places are not clear. As a result of the lack of clear roadways, it is simple for road users to create accidents. Furthermore, the street section view prevents users from interacting with nearby roadblocks. The issue with street section views is that they are prone to causing collisions. The overall height of the analysis must be considered when building city roads. Passengers' expectations must be met when working on roadways like Smith Avenue. For example, when building highways, priority should be given to passengers and cargo to guarantee that they fulfill requirements. On the other hand, designers are influenced by the environment in which they build roadways. The speed of vehicles using the route, the avenue's architecture, and traffic flow are factors in traffic in urban areas like Smith Avenue. These elements must meet the standards of the area. On the contrary, most contractors overlook most traffic needs, resulting in design issues. A road's longitudinal portions have an underground plumbing system, a drainage system, and elevation changes. Because it is difficult to check where longitudinal systems are traveling through streets, most of them tend to cause accidents involving major road users. Consultation with other stakeholders, such as drainage and pipe network system, successfully worked on longitudinal sections.

## **Bottom Line**

Street sections need to consider alternate forms of transit over automobiles. Specifically, equestrian and pedestrian uses need to be provided with more space and amenities. This is to ensure that any changes are made to accommodate the community they serve.

## **Key Takeaways for Responsible Agencies**

### ***Public Works***

Many of the roads in Acton are quite wide, sometimes amounting to 20 feet across. As a result, speed in these areas can exceed safe limits. Lane widths should be restricted to 12-14 feet, with additional lanes demarcated off to avoid excess space. Remaining widths can be easily dedicated to bike lanes, equestrian and pedestrian trails, both featuring adequate buffers such as bioswales, landscaping, or fences. Public Works should ensure that during the next repaving, the roadways are redesigned with the previous information in mind. Additionally, Public Works should also ensure that they have the adequate funds to redo any streets that would not be changed during the repaving process.

# Reducing Cut-Through Traffic



Figure 1. Map of Soledad Canyon Road and Sierra Highway

## Background Information

The Antelope Valley Freeway is the southern portion of State Route 14 and connects Los Angeles to the northern Mojave Desert. Sierra Highway and Soledad Canyon Road are two busy roads that connect to the Antelope Valley Freeway to serve Acton residents as well as commuters (Figure 1). Sierra Highway goes through the Antelope Valley and is one of the main streets that goes through Palmdale. Soledad Canyon Road is the second-longest street in Santa Clarita, branching from Sierra Highway and State Route 14. Soledad Canyon Road runs west to northeast between Valencia/Santa Clarita and Acton. Sierra Highway runs North from Acton into Lancaster, and Southwest from Acton/Aqua Dulce into Sylmar.

## **Introduction to the Problem**

Soledad Canyon Road and Sierra Highway are both two-lane highways with high speeds, 50 mph and 55 mph respectively. Because of their high speeds and connectivity to urban regions, these roads are frequented by commuters. At the Open House on February 12, 2022, residents in Acton described the danger cut-through traffic poses to the community. While speeds are already high, commuters often exceed these speeds and illegally pass vehicles that are abiding by the speed limit. As a result of these traffic patterns, community members feel highly unsafe and uncomfortable riding their horses along these routes. The county identified these trails as being appropriate for horse riding, but the feedback gathered from the Open House and local opinions differ with the perspective of Los Angeles County. The loud, consistent sounds of vehicles spook the horses and take away from the rural feel of Acton. Additionally, community members shared that there is a lack of proper separation between horse riders and automobiles, a lack of appropriate or sometimes any shoulder widths for sections of the road, and the susceptibility of horses to be frightened by passing vehicles which is a safety concern for riders.

## **Signage**

Signage can remind drivers to reduce their speed and follow regulations. Warning signage alerts motorists to any unexpected conditions they may be quickly approaching. Signs play an important role in warning drivers to be ready for certain conditions up ahead that they may otherwise not have been paying mind to. Warning signs in Acton can include equestrian signs, red border speed limit signs, speed-activated warning signs, and more.

There are a variety of signs approved by the Department of Transportation of the State of California that can be used to catch a driver's attention. For the implementation of these signs, Transportation and Public Works shall place and maintain appropriate signs and other traffic control devices listed below. Although it is not guaranteed that drivers will abide by speed limits, reminders in the form of signage may make them more cognizant of their surroundings.

## Speed-Activated Signs

A speed-activated warning sign includes a written message and a flashing beacon that can be triggered whenever an established speed threshold is surpassed by approaching vehicles. An additional measure to promote the importance of heeding to the warning of these signs and increase their visibility is to add one-by-one foot orange, plastic flags on either side of the sign (Factors Influencing Operating Speeds, n.d.). Use of such signs has led to an average 4 mph reduction in the 85th percentile speeds on rural highways (Factors Influencing Operating Speeds, n.d.). The 85th percentile speed is defined as “the speed at or below which 85 percent of all vehicles are observed to travel under free-flowing conditions past a monitored point” (Setting Speed Limits, n.d.). This means that speed-activated warning signs could persuade 85 percent of drivers to slow down by an average of 4 mph. Since Sierra Highway and Soledad Canyon Road are arterial roads with considerable traffic, this sign could help reduce speed, which in turn could discourage use of the road.



Figure 2. Speed Activated Sign

Fiber-optic speed limit reminder signs are another form of speed-activated signs. A “Slow Down” message and radars are activated when a vehicle is approaching, as illustrated in Figure #2. These signs can reduce 85th percentile speeds by 5 miles per hour on major roads (Factors Influencing Operating Speeds, n.d.). This alternative is a more permanent safety measure to reduce speeds on Soledad Canyon Road and Sierra Highway.

## Street Improvements

The Los Angeles County Department of Public Works should add street improvements such as rumble strips, bollards, and transverse markings to reduce cut-traffic along Sierra Highway and Soledad Canyon Road. Adding chokers to the shoulders would help to discourage speeding and reduce cut-through traffic. These street improvements would compel drivers to re-evaluate their speed and slow down because they would need to adjust for the new road safety features. At the Open House Event on February 12th, 2022, Acton community members shared their concerns about cut through traffic and high speed traffic. Through the implementation of these recommended street improvements, Acton community members can feel safer using these roads.

### Rumble Strips

Rumble strips are raised grooves that have different textures installed on the surfaces of roadways and shoulder pavements. The purpose of these strips is to create noise and vibrations when vehicle tires pass over them to alert drivers that they need to slow down as they approach stop signs, intersections, sharp horizontal curves, or speed transition zones.

In-lane strips (Figure 3) can be placed at the intersection of Soledad Canyon Road, Sierra Highway, and the Antelope Valley Freeway, located at the east side of Acton, as well as the intersection of Sierra Highway and the Antelope Valley Freeway, located at the west side of Acton. Results from a study comparing the effects of rumble strips conducted by the Minnesota Department of Highways showed that the average speed before installation and after installation of rumble strips was lower by two to three miles per hour. Although not much, this difference can be crucial to making sure no accidents happen as drivers share the road with other vehicles, pedestrians, cyclists, and equestrians in Acton.



Figure 3. In-lane rumble strips

Sierra Highway does not have stop signs at these intersections, therefore adding rumble strips in these areas will help alert drivers to slow down and be aware of other drivers. In addition, in-lane rumble strips can be placed at approaches to sharp horizontal curves on Soledad Canyon Road along the Santa Clarita River to reduce skidding when entering a curve at high speeds. The agency responsible for implementing rumble strips in these areas is the Public Works Department.

## Bollards

Bollards are short posts used to guide traffic toward or away from particular areas. They are low enough to keep a motorist's sight line consistent and flexible enough to keep damage to vehicles to a minimum (Figure 4). Implementing traffic bollards along lane separators can stop illegal passing and regulate speed.

A safety issue identified by Acton residents on roads like Soledad Canyon Road and Sierra Highway is that cars pass slower moving vehicles despite a double yellow or solid yellow line separating the two-laned highways. The installation of bollards along highly trafficked roads like Soledad Canyon Road and Sierra Highway would prevent cut through traffic from crossing over to the opposite lane to pass slower vehicles. In effect, vehicles would have to maintain the speed of the vehicle in front of them, keeping speeds to a minimum. Public Works is the agency responsible for implementing these devices along Soledad Road and Sierra Highway as these are publicly maintained roads.



Figure 4. Flexible Traffic Bollards

## Transverse Markings

Transverse markings are a series of parallel bars on the inside edges of travel lanes. The markings are parallel to the roadway edge and are 12

inches wide by 18 inches long (Figure 5). The intention of these markings are to give the perception that drivers are speeding up. This encourages drivers to slow down and be more aware of their actual speed. These road designs are appropriate for rural traffic calming since they are cost effective and only add minimal amounts of infrastructure.



Figure 5. Transverse markings

Adding transverse markings along Soledad Canyon Road and Sierra Highway could reduce speeds. A study in Minnesota proved the effectiveness of chevron transverse markings, revealing that speeds were reduced by 7 and 5 mph when the markings were placed in lanes with speeds in the 85th percentile (Corkle, 2001). If placed on Soledad Canyon Road and Sierra Highway, transverse markings could reduce speeds by 7 and 5 mph.

## Chokers

Chokers are a traffic calming measure that utilize parallel or off-setting curb extensions to reduce road width for specific distances. They effectively widen sidewalks and taper streets in order to narrow roads. The chokers jut out toward the inside of the road where cars are driving, causing motorists to focus their attention on the road (Traffic Calming Measures, n.d.). One of the effects of chokers is that it can reduce a two-lane street into one lane at the pinch point.



Figure 6. Speed Activated Sign

The dramatic point where chokers can convert two-lane roads to one lane can possibly have significant results in slowing cut-through traffic at locations where commuters are entering Acton. Possible locations for a choker pinch may be areas approaching the intersection of Soledad Canyon Road and Crown Valley Road (Figure 6). Here, commuters may find that a choker is a deterrent to their route choice, while Acton residents might find the road conditions to be safer due to the slowing of traffic. Figures 7 and 8 below are good examples of how the chokers could be designed.



Figures 7 and 8. Examples of choker designs

## Bottom Line

Speeding is a prevalent issue in Acton, especially along Sierra Highway and Soledad Canyon Road. At the Open House, Acton residents made it clear that they feel unsafe driving in their community due to these high speeds. Many residents believe commuters resort to Sierra Highway instead of the Antelope Valley Freeway to cut through to urban areas like Santa Clarita Valley or Palmdale.

One of the community's desired goals is the reduction of this cut-through traffic within and surrounding Acton, with emphasis on the aforementioned streets. There are multiple traffic control measures that could be implemented on these streets to achieve Acton's goal. Such measures would include transverse markings, chokers, bollards, rumble strips, and speed-activated signage.

# Key Takeaways for Responsible Agencies

## ***Public Works***

The Department of Public Works should implement the above traffic calming measures to reduce cut-through traffic along Sierra Highway and Sole-dad Canyon Road. The Department should also spearhead the maintenance of the street improvements and signage additions on these roads.

# Eliminating Trail Barriers in Acton



## Background Information

Acton currently has only three trails that are officially maintained by the Los Angeles County Department of Parks and Recreation. However, various unmarked trails are used constantly by Acton residents. The community of Acton wants the County to recognize several trails that are used by residents, thus making them “official.” Additionally, the community wants the County to establish and maintain easements through private property. Residents often block easements using fences and chicken coups. There are other instances of “private” being blocked off by residents. Residents will attempt to fence off these trails because they are afraid of getting sued if someone gets injured on their property. Many community members are against fencing along public trails, stating that they are dangerous for horses to ride between. If they get scared by a vehicle, dirt bike, or animal, horses could knock off riders and cause an injury if they hit the fencing.

Since many of the trails in Acton are unmarked, there is no designated equestrian parking at trailheads for equestrians. Additionally, there is a need for better equestrian crossings. Crossing train tracks and major highways can be dangerous and difficult for untrained horses. The existing trails that are being used by residents have many barriers making it difficult for riders to properly enjoy the trails throughout Acton. The Antelope Valley Freeway is a major freeway running throughout Acton dividing the northern and southern parts of the community. This freeway has created many barriers throughout Acton for trail uses. It is difficult for trail users to cross over the freeway without going on major roads, creating barriers for trail connection. Major concerns regarding the railroad crossing at Crown Valley Road have been expressed by community members. The signal noises and approaching trains cause issues for horseback riders because horses can easily be alarmed. There are various barriers and obstructions throughout Acton that are causing trail disconnects and limiting the ease of use for community members. Through the implementation of new trail policies, Acton trails can better serve the community by accommodating all modes of recreation.

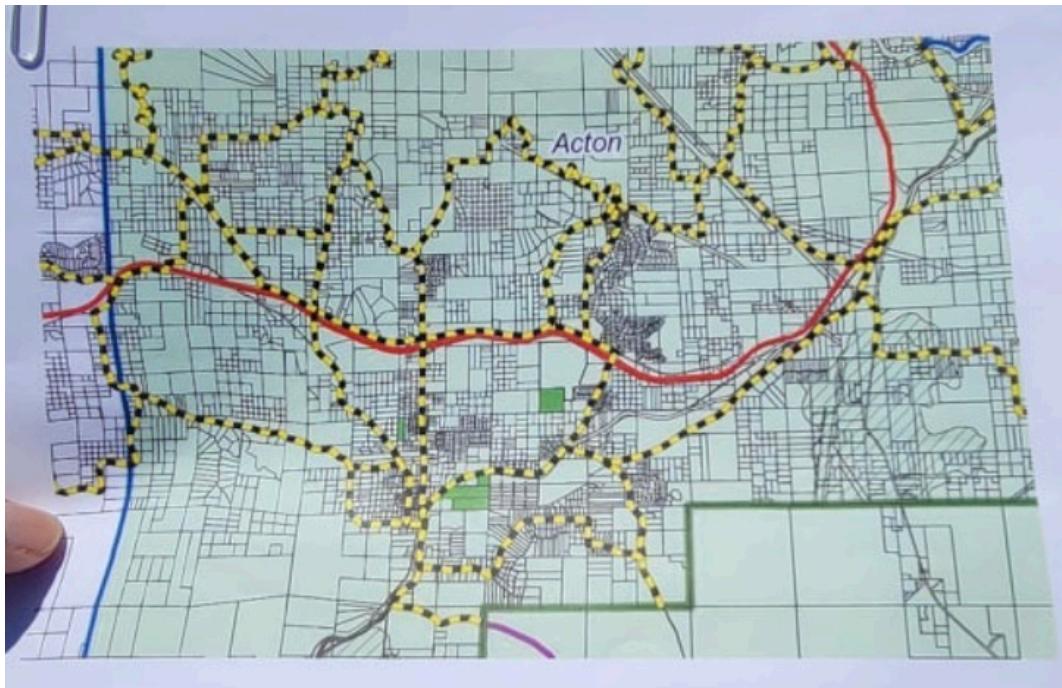
Figure 1. Locations requiring Easement in Acton



Note. Participants identified concerning blocked easements during the mapping activity during the Open House.

Figure 2 shows the marked trails existing in the Acton CSD. The marked trails include the northern portion of the Sierra Highway, a local highway bypass running parallel to CA-14 Antelope Valley Freeway, and multiple local corridors, such as Crown Valley Road, Escondido Canyon Road, Soledad Canyon Road, etc. All these trails do not have any raised sidewalks, bike lanes, or any barriers for equestrian use.

Figure 2. Marked Trails in Acton CSD



Note. The paper shows the marked (and county maintained) trail network in Acton CSD.

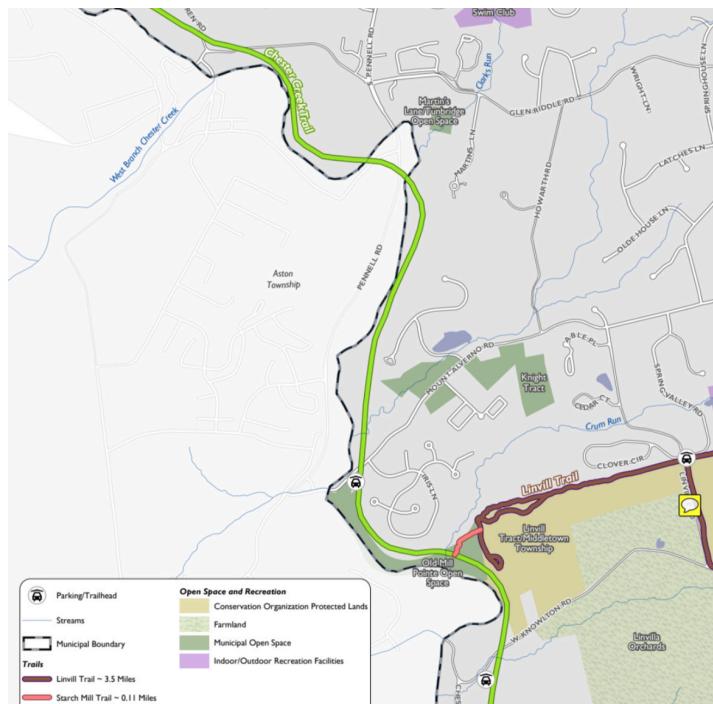
### Fences and other Obstructions

During our community open house on February 12, 2022, many residents of Acton have voiced their concerns about trail obstructions such as fences, chicken coops, and other physical objects. Residents of Acton often use trails as a means to travel between their destinations, and because of these obstructions, they no longer have access.

The Chester Creek Trail, formerly part of the Pennsylvania Railroad, faced similar barriers to what Acton faces now. These include problems with land ownership and opposition from local business and community members. A non-profit group, Friends of the Chester Creek Branch (FOCCB) wanted to take advantage of this opportunity and turn the abandoned railroad into a

rail trail. The FOCCB took full responsibility in maintaining the trail at first, but the trail became increasingly popular which made maintenance difficult over time. Therefore, the group wrote a memorandum of understanding asking for the county's help in maintaining the trail. It took the FOCCB a total of 19 years (1997-2016) to complete, this 2.8 mile trail is very successful among community members shown in Figure 3 (Szczesna, 2019).

Figure 3. Chestnut Creek Trail



Note. The Map of Chestnut Creek Trail in Delaware County, PA.

Several homeowners in Acton have also shown opposition in opening up trails near their property because of liability issues. However, trail users can follow the methods used in the Chester Creek Trail project by developing proper trail plans and a complete land development and zoning process to advocate for the importance of easy access to trails. The FOCCB did its best to communicate and compromise as much as they could to find solutions that would work for all parties. According to the FOCCB Treasurer, their success mainly came due to their positive attitude stating, "Show up. Be persistent. Be polite. Keep at it. Don't take sides if you don't have to. Try to get anybody to support you. Lots of community involvement. Sooner or later, it finally works" (Szczesna, 2019).

FOCCB has shown that community persistence is important because of the amount of work and obstacles groups have to face. Acton's town council can learn from this case study and utilize the same strategies as the Chester Creek Trail. A policy regarding trail obstructions can be implemented to help facilitate this process. To create a more cohesive set of trail networks, no one should be constructing obstacles on trails that are deemed as public or have trail easements. Therefore, the Los Angeles County Department of Parks and Recreation should implement a policy stating that:

"No person may build or place any obstructions across any well-traveled trail which has been the usual and common route of travel for not less than one year."

With this policy implemented, there will be more access to trails thus creating a more connected network of trails that aligns with Acton's goals.

## **Easements**

Several of these easements have been obstructed by new property owners shortly after purchase. To prevent these occurrences, the Department of Parks and Recreation should work with current landowners to obtain express dedications of the land and create permanent easements through contract or inclusion in the deed. The Department should also inform new landowners of the current relevant situation for their property.

Unfortunately, the County is unlikely to be able to claim these properties on the grounds of continued public use alone. For several years, some appellate courts in California would recognize continued non-recreational public use over a period of five or more years. One such example was in *Hanshaw v. Long Valley Road Assn.* (2004), in which sections of privately owned road connecting sections of publicly owned road were ruled to have become public after a long period of public use.

This possibility was struck down in the California Supreme Court's ruling in *Scher v. Burke* (2017). In this case, two members of the public had been using a road across public land to access their properties behind it and argued that the road had become public in the process. However, the Court ruled that this was prevented by existing California law. Previous courts had found that California Civil Code § 1009(b) only prevented sustained recreational use from ripening into an implied dedication, as subdivision (a)(2) of the same section described that the law was enacted specifically to prevent such cases. This

principle was rejected in *Scher v. Burke*, as the Court ruled that the included intentions of the legislature in enacting the law did not change that the text in question prevented any use from becoming a vested right.

The only exception to this is provided in subdivision § 1009(d), which provides that any areas where the County (or another governmental entity) has already performed improvement, maintenance, or cleaning work to facilitate public use for a period of five years without express permission from the property owner, the right to continue this use is conferred. As such, the County may be able to claim privately owned sections of trail for public use by maintaining them as part of the trail network.

## Railroad Crossings

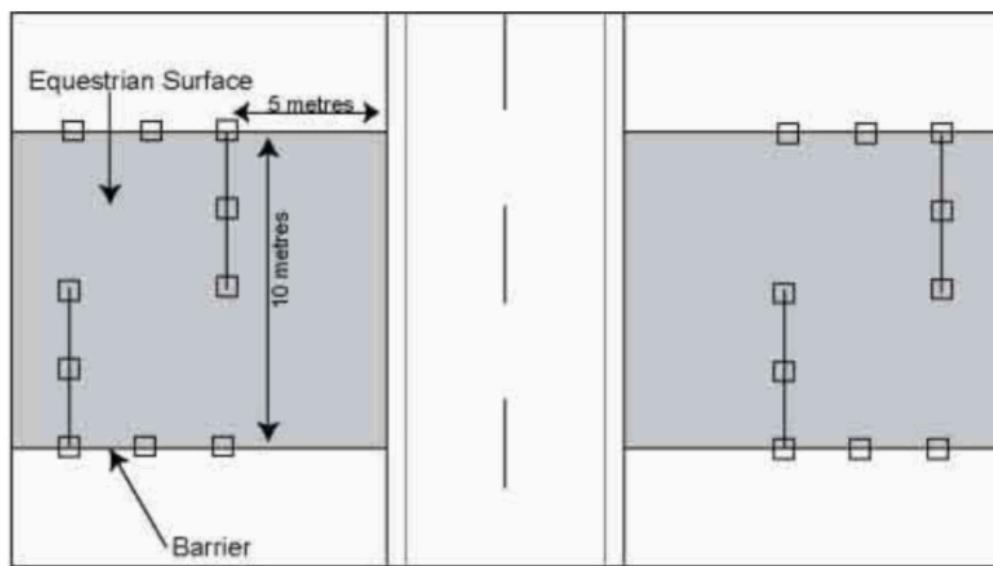
Multiple Acton residents expressed concerns regarding the highway-rail grade crossing at Crown Valley Road. Located just past the intersection of Crown Valley Road and Soledad Canyon Road, this crossing provides connectivity between the rural downtown area and residential communities further south. This location is frequently trafficked by equestrians, with several community mapped trails passing through the area. Furthermore, the 2007 adopted county trails map features a segment that includes this crossing. Currently, only a railroad crossing gate and signal is installed at the site. While this may be sufficient for drivers and the occasional pedestrian, it causes problems for equestrians. Horses are easily alarmed by signal noises and approaching trains.



Source: Google Street View, Feb 2021  
(include photo of crossing here and maybe image of trails map)

This reaction can quickly devolve into a dangerous scenario. Furthermore, the crossing lacks any right-of-way for horses, creating traffic conflicts with cars or forcing riders to cross the unprotected railroad tracks. The US Forest Service provides guidance on railroad crossings, suggesting that “to reduce the hazards associated with stock waiting to pass through a crossing, a waiting area may be appropriate” (Hancock, 2007). The document provides an example of roadway crossing standards in the United Kingdom, which require fenced L-shapes to slow traffic and a rider waiting area (Figure 4). While this regulation is intended for road crossings specifically, it could prove useful as horse riders prepare to traverse the railroad.

Figure 4. Bridleway Crossing with Holding Area



Note: L-shaped fencing slows riders before reaching a holding area. Source: UK Highway Agency, 2005

Equestrians must infringe upon vehicular right-of-way to cross the railroad safely. Compounding this issue is the shared reliance upon an asphalt and concrete road, which generally “don’t provide enough texture or traction for a horse or mule” (Hancock, 2007). At our public outreach event, this issue (poor paving materials at the crossing) was raised to us by several residents. The addition of lanes with appropriate surface materials for horses would facilitate railroad crossing at this location. The Forest Service provides several examples of adequate materials, including rough-textured concrete and asphalt with chip seal.

## Highway crossings

Conversations with residents revealed a lack of connectivity between neighborhoods north of Sierra Highway and the rural town center to the south. Residents expressed that Sierra Highway's extant crossings were unsuitable for horses due to their location at busy intersections. In general, trails located near or adjacent to Sierra Highway were described as undesirable, with residents expressing a preference for trails distanced from main arterials. Equestrians noted that Sierra Highway could only be traversed with a horse trailer in its current state.

A crossing at Sierra Highway is essential to Acton's connectivity. Well-utilized trail networks exist both north and south of the highway, and the 2007 adopted county trails map indicates planned trails crossing the highway. A In accordance with statements made by residents, a strategy that avoids busy intersections would be desirable.

The Trust of Public Lands shows a project involving constructing an underbridge tunnel. This design (shown in Figure 5) will provide a separate passage for trail users to safely cross any railroad crossing (Kastelic, 2014).

Figure 5. Underbridge Tunnel Design



Note. Underbridge Tunnel under CSX tracks in Middleburg Heights, OH

## **Bottom Line**

Acton residents are facing multiple existing problems. Majority of the roads in Acton as trails are not accepted and the maintenance cost falls on the residents. The designation of the marked trails and the commuter traffic attracted from the Antelope Valley Freeway (CA-14) has made these trails extremely dangerous for non-automobile users. The consensus of the Acton community demands easements on the existing pathways and better trail infrastructures for equestrian uses.

The lengthy process of trail acquisition, the difficulty to provide maintenance due to increasing traffic, and the unresponsive local public agencies can be resolved by uniting the community voices and negotiating as a united entity with the homeowners and other stakeholders for liability issues and permanent easement. Future potential homeowners will be informed about the equestrian usage on the trails. The community can demonstrate the frequent usage of these trails for non-recreational purposes to request for easement through the court, per the California Civil Code § 1009(3)(d). The railroad crossing at the intersection of Crown Valley Road and Soledad Canyon Road has high equestrian traffic and poor infrastructures. The train horns can frighten the horses and lead to dangerous scenarios for the jockeys. The crossing lacks equestrian right-of-way and may lead to collisions with cars and trains and subsequent deaths.

## **Key Takeaways for Responsible Agencies**

### ***Regional Planning***

The Department of Regional Planning can coordinate with the department of Parks and Recreation to secure permanent easement.

### ***Public Works***

The Department of Public Works can install barriers and create separate or buffered spaces dedicated for any kind of trail users, including equestrian and bikers. The department also needs to redesign the railroad crossing and improve the safety infrastructure at the location.

### ***Parks & Recreation***

The Department of Parks and Recreation shall negotiate with the property owners to create permanent easement and inform the future potential homeowners. Alternatively, the department can demonstrate the non-recreational purposes of these trails to request for easement through the court, per the California Civil Code § 1009(3)(d). Parks & Recreation can also mark and integrate more pathways in Acton into the trail network and dedicate an equestrian priority on those new trails.

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