

Does the Automobile still Guide Modesto?

Attitudes and Perceptions of Voting-Age adults towards the Implementation and Usage of Active Transportation Infrastructure

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Walking Along a Dusty Road

Located just over 90 miles from San Francisco, California sits the city of Modesto. Nestled in the Central Valley, the city began as a depot for the Central Pacific Railroad in 1870 as federal money was invested in expanding rail service into previously inaccessible regions following the completion of the transcontinental railroad. (Bare, 1999; Maino, 1970) A grid was laid out from the rail tracks at a near-45 degree tilt from Cardinal North. Numbered streets ran south-easterly and northwesterly while lettered streets ran from the tracks to the northeast. (Figure 1) The Tuolumne River forms the grid's southern border and this historic grid has remained the structure of this city's downtown as it grew in prominence and size.

Despite the sprawling environment that was already taking shape in the 1950s, several of the long-time residents remember walking several miles in from the farthest flung developments and townships along SR99. Carolyn Hicks, a resident since the late 1950s, remembers regularly walking from Highway Village to Grace Davis High on Tully Ave, or even 10th St downtown (2- 4 miles one way), when her father had to work early and she was unable to catch a ride. In the past, four lane stroads, Prescott Rd and Tully Rd were just dirt roads crossing farmland at the time. Highway Village was a development north of Modesto made up of small stucco houses adorned with window awnings to shade from the sweltering valley summers.. Cur-



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rently, a Red Lobster, a Chuck E. Cheese, and a deceased Toys-R-Us sprawl along the east side of Sisk Rd (a frontage road to SR99) with several apartment complexes, and elderly care facilities bordering it to the north. The Highway Village development was built as cars were becoming an accessible commodity, during the beginning of widespread suburbanization and overwhelming automobility. The struggle of living at the fringes of an automobile-scaled environment with just one car shared between a large family encouraged Mrs. Hicks to always have a “good-running, new car”. She bragged that once she ran off with her late husband they would buy a new car each year, unfortunately unable to afford holding onto the “beautiful things.” The private automobile defined an entire generation that still holds a great deal of social, economic, and political power—cementing the automobile as a staple of futurism and as a defining force of American ideals, as well as urban landscapes. Do social expectations primarily drive automobile usage, or do the conditions created by the built environment perpetuate the automobile cravings? Does this car-centric way of life harden residents to the possibilities of multi-modal transportation infrastructure?

Research Question

How great of a guiding force does car culture continue to be for voting-age residents of Modesto, California?

The purpose of this study is to begin the process of establishing an understanding of the cultural and environmental forces maintaining car culture within Modesto, with the hope of unearthing enough evidence to warrant further research focused into specific aspects of these forces’ possible relationship with transportation infrastructure.

I argue that social desires

and environmental constraints drive individual behavior, shaping both needs and wants. (Gifford, 2014; Handy et al, 2002; Henderson, 2006) With this pretense set, I believe that understanding the extent to which human social and physical behavior is affected from a built environment centered around the personal automobile is necessary for the greater implementation of multi-modal transportation; including public transit and active transportation. The naturalization of these modes must occur, they must become viewed as necessary an element of American urban planning as making comfortable space for automobiles. An adequate and stable pivot in cultural standards will only occur if the social aspect of the automobile and the urban environment created for it are understood.

Research Design and Methodology

My research design is intended to create a greater understanding of the social environment shaped by the personal automobile within Modesto. Reading compilations of and gathering archival data, recollections of long-time residents, participant observation at a sampling of locations critical to everyday life in Modesto, and interviews with a small sampling of residents of varying ages about their experiences and conceptions. This will paint a panoramic portrait of the social and built environments shaped by mass ownership of personal cars and will help to illustrate its effects over the past seventy years. The recollections may be constructs of a rose-hued longing for yesteryear, nevertheless they will lend themselves to a better understanding of the grasp the private automobile has on communities within Modesto.

The surrounding environment of each of the seven Modesto City School district (MCS) high schools was analyzed to understand

how automobiles are expected to be cared for in planning decisions. The situation and volume of parking compared to the elementary and junior high schools immediately provides insight to the persistence of the notion that car ownership is a fundamental step into adulthood for residents. The connections, or lack thereof, to alternative modes of transportation will show how these schools are expected to function from a mobility perspective, and highlights if the car still truly is the de facto mode.

My observations of the environment surrounding each major hospital in Modesto; Sutter Gould Memorial, Kaiser Permanente Dale Rd campus, and Doctor’s Hospital, will be used to note the difference in service and connectivity between different modes of transportation.

To adequately gauge the actual position of the city of Modesto as it stands currently, this study looked to the city’s long-reigning and ever-present Non-Motorized Transportation Plan of 2006, City of Modesto 2019 General Plan, SR108 Corridor Plan, along with the current zoning and bike network mapped on ESRI GIS by the city’s Community and Economic Development Department. The city’s municipal code was also studied, and with these plans and maps I will be able to generally ascertain the stance and expectations of city hall, as well as the problems it has forecast. My field research was conducted to make note of surface conditions, atmosphere, and pedestrian/cyclist interactions with automobiles created by the urban environment. The combination of all this information will provide a basis for understanding Modesto’s built environment as it currently stands.

Interviews were conducted with voting age residents to better understand the culture and lifestyle surrounding and impacted by private ownership of an automobile in

Modesto. Their recollection of city geography was gathered to better understand the development of this land, being sure to note changes to the historic downtown area. These interviewees were split into three age groups: Seniors (65 years+), Middle Aged (40 years - 64 years), and Young Adults (19 years - 39 years) (Appendix B, Figure 2). One City of Modesto Transportation Designer was also interviewed, Jonathan Caldwell (Appendix B, Figure 1). The interviews loosely followed a schema, in hopes of encouraging conversations branching off into greater detail. These interviews were also all conducted with ethnically white or white-passing individuals. This small sample set does present a tremendous issue when attempting to extrapolate these findings to Modesto as a whole, as Latin and Hispanic people make up over 43% of modern-day Modesto (US Census, 2020). This alters the importance of interview data, and this study's findings, as nearly half of the population will not be represented.

Connectivity to government buildings and services was not measured or noted - a severe oversight and a critical piece to understanding how a car-centric environment affects decisions surrounding transportation.

Terms Used

Quick reference for locality and field specific terms used throughout this study.

Class I Bike Path - A bike path totally separated from the automobile roadbed. Elevated and removed from the street completely. (Modesto TED, 2022)

Class II Bike Lane - A bike lane painted on the roadbed. May or may not have green striping and painted buffer. (Modesto TED, 2022)

Class III Bike Route - A route marked only by metal signage or painted bicycle symbol on roadbed.

No dedicated space for cyclists. Can be referred to as a "Sharrow." (Modesto TED, 2022)

Class IV Cycle Track - Bidirectional, two-lane track protected by pre-cast concrete curbs. In Modesto, these have flexible bollards on top for visibility. (Modesto TEDD, 2022)

Active Transportation - any pedestrian or bicycle adjacent mode of transportation that is non-motorized. Powered wheelchairs are an exception to this rule. (Caltrans, 2017)

Automobility - centering society and everyday life around the automobile and its spaces and needs (Henderson, 2006)

Car Culture - culture surrounding the personal automobile that eventually lead to widespread development devised for a lifestyle centered around the private car. (Shoup, 2011)

CEDD - City of Modesto Community and Economic Development Department; the department encompassing building inspections, transportation infrastructure design and engineering, and city planning.

MAX- Modesto Area Express bus service

MCS- Modesto City Schools District, one of several school districts within the city, but controls all of the public high schools.

MJC - Modesto Junior College, composed of two campuses. West Campus sits on the western side of SR99, along Blue Gum Ave and Carpenter Rd (Briggsmore Ave after it crosses the SR99). East campus sits on College Ave, just northwest of Needham Ave and the Graceada Park neighbourhood at downtown's northern edge.

Multi-Modal - Multiple transportation types (TEDD, 2015)

Stroad - Infrastructure between a street and road. Coined by Charles Marohn in 2013, founder of Strong-Towns organization, to describe typical American arterial or collector street that was built to favour

automobile traffic. Environment is hostile to human-powered transportation modes. (Strongtowns, 2018)

TEDD- City of Modesto Transportation Engineering and Design Division

Literature Review

This collection of researchers was gathered with the intent of understanding the perceptions of suburban adults towards multi-modal transportation infrastructure by forming an understanding of the conditions present in the built environment.

The work of Claire Marcus in their book, *The House as a mirror of Self* (2006), discusses the psychological effects of the environment (built or natural) on human beings. Marcus expands this to argue that humans find settings that are reflective of their current physiological and socioeconomic state, but can become trapped in these spaces as they look to improve their health, finances, and social stature. I will apply these findings to the suburban environment of Modesto and determine if there is sufficient evidence to suggest that the spatially separated, suburban environment of the city has affected its resident's perceptions of expanding alternative transportation networks.

For interpreting the political culture surrounding automobility as it relates to the urban environment Jason Henderson Particularly focusing on his works *Street Fight* (2013) and "Secessionist Automobility: Racism, Anti-Urbanism, and the Politics of Automobility in Atlanta, Georgia" (2006) . Employing his research on the politics of anti-urban and pro-car movements to better understand how urban geography, as it relates to mobility, is a result of politics and culture. His work also touches on how people interact and interpret their space differently depending on mode of transportation; the validity of ana-

lyzing interactions and discussions through this lens is assured by the vast breadth of references and data upon which his work stands.

Colleen Stanley Bare was an author and historian of the Modesto area. Her historical works provide much needed context and understanding to the recollections of locals and my observations of the contemporary built environment. The very definition of a long-time resident, Mrs. Bare lived primarily in Modesto from 1925 til her death in 2018. Her personal knowledge of the area and lofty education at Stanford and Berkeley enrich her works, providing an all-encompassing overview of the area's history from the beginning of American development to the new millennium.

Brief History and Description of Modesto

Modesto is a city of 218,454 people, by the 2020 US Census, situated along the Central Valley's SR99 freeway. Nestled between the Stanislaus River to the north and the Tuolumne River bounding in downtown to the south, the now sprawling city was once an abnormality of urban development amongst the grasslands and perfect rows of nut and citrus orchards that blanket the Central Valley's floor. The city was sited in 1870 by the Central Pacific Railroad as it built to connect Sacramento and Los Angeles. The comparatively off-kilter downtown grid is the original layout and orientation of the city. The city has since sprawled outwards to a land area of 43.05 sq miles, consisting largely of single-family residential with a density of 5,072.2 people per sq mile (US Census 2020). Situated near the center of the Central Valley, the city has long been reliant on the valley's fruitful agriculture for its food processing industry. E&J Gallo, Del Monte, Sciabica Olive Oil, Frito Lay's, and Blue Diamond Almonds all

have a hub, or are headquartered in Modesto. (Modesto Economic Division, 2022)

Analysis of Findings

There is a deeply ingrained love for the private automobile in Modesto that is expressed by not only the interviewees, but also the luscious murals blanketing building sides and regular car shows at MJC West Campus, Pelandale In-N-Out, and the old A&W drive-in on G Street. The scores of waxed Pontiac GTOs, rumbling rat-rod Chevilles in single-stage primer with rust curling up from the fender wells, and lowered Hondas with cambered wheels can all be found floating along any of the city's roadways at any time of day. This local norm continues to nurture the spirit of Modesto Graffiti and car culture, by providing physical proof of what "success" should look like to excited eyes craning to catch a glimpse of whatever automobile just flew by. The Municipal government celebrates this culture, as well, with signs and plaques along the traditional cruise route of 10th, 11th, and 12th Streets. 'Graffiti Cruising' has been officially reinstated as a special event in recent years after decades of being strictly prohibited due to security concerns following violent outbursts at events. (Modesto Bee, 2018) The route takes cruisers from Tenth St, through the locally prominent Five Points intersection where McHenry enters the historic downtown grid, and northbound up McHenry Ave/SR108 to Briggsmore Ave where they perform a u-turn.

When interviewing senior residents who worked and gathered downtown during their youth and throughout their lives, it became apparent that the landscape did not totally bow to cars until the late 1960s and 1970s. Jean and Edie recall that following the construction of the current courthouse, two of the downtown parking ga-

rages followed quickly behind. It was around this time that many of the banks and commercial buildings with ornate fascias and elegant interiors had fallen into disrepair. Following the path of many cities of the era, Modesto constructed surface lots, raised garages, and expanded existing off-street parking in an attempt to serve a growing population of motorists. Alleyways were widened to accommodate greater proportions of traffic, demolishing small buildings and businesses such as a local jeweler on 10th St for access to expanded parking. The Palladium nightclub now enjoys the off-street parking created by this particular alleyway expansion, despite dramatically altering the appearance and spatial distances within the city's historic, commercial core.

This shift in service to the automobile came about as strip malls continued to sprout up along McHenry Ave, inching north into the orchards, pulling major businesses out of downtown and 10th St. Montgomery Wards was one of the first major retailers to leave, relocating just north of the Briggsmore Ave and McHenry Ave intersection. (Bare, 1999) Vintage Faire Mall at the city's northern reaches where Standiford Ave meets the SR99 was completed in 1977, shuttering the commercial reign of the Tenth and Eleventh Street district. JCPenney abandoned their location on the corner of 10th and J Street, at the heart of the commercial district, along with Long's Drugs and Walgreens. The loss of keystone stores to the sprawled stretches of the city, accompanied by a swathe of zoning regulations affirming and protecting suburban ideals signaled that the city's planning department was turning towards automobility.

Parking lots are now synonymous with the city's aesthetic. Every commercial district beyond the historic neighbourhoods surrounding downtown is setback from the

street by a lagoon of off-street parking. The current zoning code states that shopping centers larger than five acres must have one parking spot per 300 square feet outside of the Downtown Development Area (City of Modesto CEDD, 2022). Despite their desolate appearance during the heat of the day, parking lots are often popular locations for social gatherings such as star gazing due to parks being aggressively patrolled by police officers, volatile homeowners, and peaking amphetamine users. Schools, churches, and nonprofit organizations utilize the flat, open space for bake sales and community events. Adolescents gather on the cracked asphalt under LED lamps after draining shifts at their customer service job. Car meets regularly take over strip-mall lots, with a particular favourite being on Pelandale Ave where the longest-standing tenant is an In-N-Out.

For those traveling on the sidewalk, navigating the deep curb cuts placed in rapid succession for the benefit of motorists can quickly become tedious, even for someone in good health. For seniors and physically handicapped individuals, the uneven ground serves as a constant obstacle. During observations of the sidewalks in commercial districts along McHenry and Oakdale Rd, one could notice the frequent stumbling and tentative steps of encumbered seniors. These curb cuts slow down seniors and disabled individuals who may be unable to drive and must navigate these spaces by foot- aided by a cane or walker, an electric mobility scooter, a wheelchair, or without mobility aids. While ADA compliant curb cuts adorn nearly every corner of every major street in the city and continue to be planned for construction, parking lot curb cuts remain a visible challenge to pedestrians.

As wretched as these areas are to navigate on foot, retailers and

developers have a significant stake in keeping them. These curb cuts allow for greater automobile accessibility, reducing navigation time and wear on vehicle suspension by providing a smooth transition from roadbed to parking lot. Getting customers into the store, or restaurant, faster is beneficial for businesses. Increased efficiency also hinges on how quickly customers can exit the store and subsequently, the parking lot, so more customers can be served. How painless the parking process is also seems to be a factor, as GPS softwares and business reviews employ filters and specific questions to assist with and accurately relay this portion of the customer experience. A multitude of wide curb cuts onto each street facilitates this, as does a wide-open asphalt plain. Large surface parking lots with a handful of shade trees dotting the tarred landscape is not friendly to pedestrians trudging through triple digit heat or pouring rain. No signage or markings for other modes aside from posting of anti-nuisance laws is present in these places, effectively signaling to non-motorists that “you are not welcome here.” Bike racks may be found around the entrances of some stores, but are typically uncared for and often in a blindspot of security cameras, patrons, and employees.

The downtown core clustered around the railroad line remains relatively walkable, with the historic La Loma and Aurora neighbourhoods acting as the outer ring of this walkable environment. There is a clustering of grocers throughout the downtown area, along arterials and collectors, but these businesses are not open late at night and seem to cater to downtown workers driving in from the suburbs or other towns. This creates a sort of food desert for the lower-income households that inhabit Downtown. Food pantries attempt to fill the gap, but fast food restaurants have flooded the area, and serve patrons late into

the night making it more accessible to low income individuals. These spaces also cater to automobiles as the late-night service requires use of the drive-thru, many of which refuse to serve pedestrians, even through the drive-thru.

The downtown area is also the most dangerous in the city for pedestrian and cyclist collisions with motor vehicles. (UC Berkeley TIMS, 2022) The TIMS map shown in Figure 4 displays a large collection of hotspots covering the downtown area. This area was also slated for Class III bike routes by the 2006 Non-Motorized Plan (TEDD, 2006) although this has not yet come to fruition. The downtown area also has the greatest concentration of workers (16 years and older) who do not have access to an automobile (US Census, 2021). People living in this downtown area are impacted detrimentally by a mode of transportation they do not even have regular access to.

In relation to cycling infrastructure, bike lanes start and stop randomly throughout the city. New Class II bike lanes are greened and given a painted buffer, but are often dirty and cluttered with dangerous debris along major roads. These green striped lanes are found around intersections of old developments and along arterials and collector streets of new developments. These bike lanes, placed in the gutter along arterials and expressways, are seasoned with gravel and minced glass shards. The only regularly swept clean areas are regularly filled by automobiles turning right or pulling out, increasing danger to cyclists just as they catch a break from dodging debris. Following a rainstorm, these areas are often flooded, as 2/3 of Modesto’s sewer system is reliant on rockwells. (City of Modesto Utilities Department, 2022) This pushes cyclists and pedestrians together, wading through the waters lapping just over the elevated side-

walk's surface. In some areas, the floodwaters rise so high that the roadway is more reasonable than chancing expensive bicycle tires to the murky waters. This is an arguably far more dangerous concoction, as cyclists are pushed into what poor driving conditions with motorists of varying skill levels and vehicle capabilities attempting to navigate those conditions.

Public Grade Schools

All of the elementary schools in the city have been reconfigured in recent years for improved safety, making the parking lots and front fascia nearly homogenous across the municipality. Stanislaus County, Sylvan, and Modesto City school districts have all adopted the single-point of entry with many adopting staff parking lots barricaded off to visitors by swing gates and motorized arm gates. These parking lots are just large enough to house the staff's cars, as mandated by the zoning code.

The Junior High Schools have more parking, but still just enough for staff. Parents picking up students are expected to idle amongst the surrounding neighbourhood, or simply not drive at all. While MAX bus stops serve the surrounding areas, they do not serve all the schools directly, leaving some parents no choice but to drive. Class II bike lanes line the streets immediately around the junior high schools, but these lanes are regularly clogged by SUVs and pickups during the most critical times- the morning and afternoon pick-up rush.

Observations in the area along El Vista Ave, the southern continuation of Oakdale Rd after crossing Dry Creek and Scenic Dr, there was a great number of people cycling and walking during commuting hours. La Loma Junior High and El Vista Elementary are along this arterial, and it serves as a connection from Oakdale and cen-

tral Modesto to the industrial zones along Yosemite Blvd and near the airport. As there are no bike lanes throughout this stretch (barring the intersections at Scenic Dr and Yosemite Blvd) cyclists are forced to choose between the jagged and heaved sidewalk seemingly formed by tectonic movements, or the bustling artery in which they must travel alongside a wall of parked cars and speeding drivers jockeying for pole position. This is an area of the city where the street parking is often chock full of vehicles. Here, a major problem for cycling and pedestrian infrastructure upgrades presents itself as a

Transportation Designer for the City of Modesto, Jonathan Caldwell, stated in an interview with myself this year, "[the department] does not want to touch existing residential street parking at the moment." He alluded to the venture being akin to stirring a hornet's nest. Unfortunately, this effectively leaves areas like this as dead zones for modes of transportation other than the automobile, as it is unsafe and uncomfortable to travel any other way.

Modesto's seven public high schools have been fortified and lightly reconfigured to meet single point entry standards. Fresh paint tops off the renovations. In order of their construction, Modesto High, Thomas Downey, Grace Davis, Fred Beyer, Peter Johansen, James Enochs, and Joseph Gregori comprise Modesto City Schools' high school roster. Small oceans surround the newest high schools (Gregori, Enochs, Johansen), while the older high schools (Downey, Modesto High, Davis, Elliot) sit on the shore of a smaller asphalt lagoon, wrapping around it like a seaside resort. Modesto High has a parking lot sitting adjacent to the front of the school, at the split of Paradise Rd, a two-way thoroughfare from the into two, one-way collectors with local roads immedi-

ately fanning out. The outsized increase in parking stall volume from the junior high schools to the high schools is a clear indication of the expected need to care for a great number of the student population's automobiles- automobility is expected to continue.

Hospitals

Each of the city's three primary hospitals have supplied ample parking. The City of Modesto's Municipal Code requires 1.75 spaces per bed (City of Modesto CEDD, 2022). This explains the presence of the parking garages on both Sutter Gould's Memorial Hospital campus and Doctor's Medical Center campus. Both hospitals are hulking complexes, towering above their surrounding streetscape at the Briggsmore Ave and Coffee Rd intersection, and Orangeburg Ave, respectively. The city's newest medical complex is the Kaiser Dale Rd campus, rumoured to become the medical giant's Central Valley hub. This monstrosity sits at what is now the northwesternmost corner of the city (far beyond Vintage Faire, parallel with the town of Salida) and is surrounded by an ocean of parking. Class II bike lanes exist only along the portion of Dale Rd immediately along the Kaiser campus. Doctor's and Memorial are connected by Class II bike lanes that connect back into the rest of the bicycle network (Virginia Corridor Class I, Coffee Rd and Orangeburg Ave Class II can be seen in Figure 5)

The pedestrian and cycling experience within these spaces is disjointed, tied to the automobile, and, at times, precarious. For example, at the newer campuses (Kaiser and Memorial), sidewalks and pedestrian infrastructure will continue onto the campus from the street, even when following a driveway - this is not so at Doctor's. Doctor's is also home to a delightfully shaded environment with winding pedestrian paths and tree-

lined sidewalks that all dump into a parking lot with varying connectivity. Some connect to a building or sidewalk by way of a crosswalk, while the prettiest paths dump into a parking lot with no further guidance or protection. Doctor's is serviced by one bus stop, placed at the farthest point away from the main entrance (Southwest corner of campus at Orangeburg Ave and Sherwood Ave), and any pedestrian access into the campus, due to the perimeter wall. The long journey begins with a walk down Orangeburg Ave, rounding the corner onto Florida Ave, and two more blocks to Coolidge Ave. Shaded and relatively pleasant for someone not currently encumbered with pain, grief, existential dread, or any natural response to a direct confrontation with our mortality, this long jaunt could quickly become a trying endeavor for someone with chronic pain or family members needing regular visitation.

While the two newest campuses have far better integration of pedestrian and mass transit rider needs, they are still secondary to the automobile. Dirt paths trod into grass abutments at Sutter Gould Memorial show a more favourable path for humans, rather than the sidewalk that only follows roadways built at dimensions necessary for cars. A pedestrian bridge soars over Spanos Ct, connecting the main tower of Memorial to its central parking garage - seemingly the lofty equivalent to the dirt paths crossing the grass strips below. Both paths are optimized for pedestrian use, but are ultimately subject to the whims and needs of automobiles. Pedestrian amenities disappear within the surface parking lots, apart from sidewalks and crosswalks to reserved handicap spots and an exposed concrete sidewalk lining the perimeter of the buildings. Use of the pedestrian bridge is ultimately reliant upon motorists, as is the demand

that realized its existence. In both parking lot arrangements, those on foot must contend with automobiles, much like the one they may have just exited. Peering out from behind the bed of a pickup truck wedged into a compact space like Winnie the Pooh in a pot of honey, then scurrying to the next safe space like a row of trees before crossing another patch of asphalt designated for automobile travel. Traversing these lots in an automobile, exhausted, and worried sick about a loved one is no small feat either with blindspots, distracting and all-surrounding activity, incomplete signage, and pedestrians attempting to safely navigate the parking lot as well.

Life behind the Wheel

All interviewees spoke to their regular usage of the automobile for daily life. Only three interviewed spoke of any sort of regular usage of a bus system during some part of their life- MAX, MJC shuttle, or public school bus. Michael, one of the interviewed young adults, relies on his motorcycle for transportation. However, it is a 2000 Suzuki and mechanical parts have a lifespan. When a gasket fails, a wire rubs its skin off and shorts, or a sensor expires, he is often forced to ride the MAX bus. Grateful for its expansive network, which the seniors say has expanded greatly in recent years, he is able to traverse the city without being totally reliant on his skateboard or a rideshare service. This is so long as the bus system runs as late as it is supposed to, a bus is not cancelled, and he does not have to transfer more than once. Even transferring once is a burden, easily adding 25 minutes, or more, to a journey that would take less than the transfer time alone to complete by automobile.

Two residents, Ren and Edie, have MAX bus stops just outside their respective homes. Both work, and have worked, downtown

for many years without ever taking the bus. Timing one's morning routine around a bus with a frequency of about 1 per 45 minutes is just not feasible.

The bicycle is not viewed as a realistic mode of transportation, instead being treated primarily as a form of recreation, with the same being true for walking. What became clear from watching the streets, at any time of day, is that many residents use their bicycles to haul assorted materials, recyclables for collection, and groceries. Many others can also be seen wearing backpacks and regular street clothes (jeans, cargo shorts, cotton hoodies- not specialized cycling gear). With the limited scope of this study's research, it is unclear if this perception by the majority (car owners) has resulted in pushback against alternative transportation improvements or investment. Apathy may be just as dangerous, however, as Jonathan Caldwell pointed out, there remains a small, devoted sect that backs the automobile and its dominance over city space, seemingly above all else. If a comprehensive network was proposed, and brought to the voters, this could be problematic depending on the social reach of this small group.

Roadway Intersections

All traffic must pass through the intersections created by roadways built to specifications with the primary purpose of serving automobiles. This service is also expected to be painlessly efficient, a sentiment consistently affirmed by interviewees when asked what they believe makes a "good" and "comfortable" road when driving. Motorists pass through many of these intersections regularly and rapidly, whereas cyclists and pedestrians must wait, often with multiple cycles lapsing to just navigate through. The California Department of Transportation highlighted the impact of intersections

on pedestrian traffic with their 2010 guide on Complete Intersections. The first sentence reads, “Intersections are major points of conflict for road users and are the frequent site of injuries and fatalities.” (Caltrans, 2010) Studying the map of pedestrian and automobile collisions compiled by UC Berkeley’s TIMS software (Figure 5) shows that hotspots tend to be around major intersections of high traffic volume. (City of Modesto Public Works, 2020; Figure 8) These are prominent intersections where government services, religious centers, schools, entertainment, outdoor recreation, and commercial activity are centered around- navigating these spaces is necessary to life for all Modesto residents.

A particularly notorious intersection sits at the terminus of McHenry Ave as it dumps into the downtown grid. Five Points is locally infamous for its long wait-times, confusing lane orientations with a near-impossible curve for the interior lane crossing westbound onto Needham Ave. Named for its five intersecting streets, Five Points is an unavoidable part of driving in Modesto as it directly connects Downtown, 9th street and MJC East campus, McHenry Ave, the eastern suburbs, and southern industrial districts. Downey Ave, an eastbound one way arterial that becomes Needham Ave after crossing Five Points brings traffic from the city’s two southern arterials- Scenic Dr. and Yosemite Ave. The new alignment of SR132 stems directly from Needham Ave, effectively turning this stretch of road into a surface freeway. The locally iconic Ralston Tower and surrounding greenspace clings to a triangular slice of land at the southeast of the intersection, rising above the streetscape like a stubborn boulder in a raging river. The tower is occupied exclusively by senior citizens.

Hours of observing the area highlight several mobility and

social justice concerns and questions. Namely, does the emotionally charged driving of agitated and/or confused motorists affect reaction time? During my observations here, aggressive hand gestures, shouting, honking, and aggressive driving behaviors were common sights. Further information on the age and mode of transportation at time of collision are needed to better assess the situation, but it appears to be a nasty brew. The environment pulses with waves of deafening traffic noise, stillness, and repeat. Placing a senior citizen facility in this noxious environment seems short-sighted at best, raising questions over the quality of life for those with diminished cognitive abilities, respiratory health issues, and/or mobility handicaps. The dangerous street environment makes the journey to the Smart and Final supermarket across I St or Denny’s across Five Points an uncomfortable undertaking, as evidenced by the bevy of timid glances, checking to be sure automobile traffic has actually obeyed their red light.

Security

Security was mentioned by all age groups as a key ingredient in making them feel comfortable in a space. The fountain of personal experiences detailing accostment, robberies, assault, and even a stabbing by just this small study group give great credence to the concerns regarding personal well-being and security while out-and-about in Modesto. Discussion of riding the bus brought excited recollections from youthful years, but always followed uncomfortable shifting in their chair accompanied by a collection of sighs and hand motioning. As security on mass transit systems is regularly highlighted by national and local news and media, Modesto residents are duly concerned as well. However, much further study is needed to see if bet-

ter security would lead to enticing people out of their cars, as is the goal in major metropolitan regions.

Security can be achieved through the built environment, protecting bodies with different capabilities, engaged in different activities, and moving with different methods by thoughtfully providing a space for these differing bodies. Unfortunately, the nationwide mass investment into automobility has meant security for motorists at the expense of pedestrians and cyclists. (Henderson, 2006) Seeing as all those interviewed are almost exclusively motorists, who suffers from the increased security of motorists in Modesto must be analyzed. Respondents unanimously mentioned clear signage and clear delineation of space as necessary components to a safe streetscape and parking lot. This treatment is not often shared with non-motorists as McHenry Ave, the second busiest street in the city by traffic volume (Modesto Public Works Department, 2020; Figure 7) is without clear demarcation of space for cyclists despite having signage declaring it as an official bike route. The only parking lots with bike lanes throughout their winding paths would be the MJC campus lots. Bike racks have been outright forgotten from the new Savemart flagship store on Oakdale Rd, to the immediate west of the Village One development. The bicycle and pedestrian network have improved dramatically since 2006, as shown by Figures 3 and 4, but vital connections are still lacking at locally notorious intersections, and according to the TIMS map from 2016-2021, these are the areas with the highest concentrations of automobile crashes with pedestrians and cyclists. US Census Data from the American Community Surveys 1-year estimates from 2021 show that these car crash hotspots correlate with the lowest income areas of the city (Figure 7), which, as shown by Fig-

ure 6, tend to have the least access to automobiles.

There are plans currently being drawn up to sort out the locally infamous Tuolumne Blvd, B St, and 7th St intersection, just south of downtown and the Tuolumne River. This area has become especially deadly for cyclists and pedestrians (TIMS, 2022). Unfortunately, the same cannot be said for McHenry Ave, as CalTrans still owns the right-of-way on it. The city's greatest commercial corridor must remain a car sewer until CalTrans relinquishes its claim. As the cycling network continues to expand and strive for greater connectivity, it would not be difficult to imagine the intersections of bike lanes and lack thereof to continually worsen as more people begin to use the cycling network. This would be the natural assumption, and data from 2011 - 2015 by UC Berkeley's TIMS provides some evidence to back this assumption. Comparing the two collections of years, the latter set shows collisions becoming centralized around key intersections, whereas the earlier years (before the College Ave Road Diet and Arterial Reclamation project) showed a more sparse distribution of incidents.

Totally separate multi-use paths, like Dry Creek and Standiford Trail, were subjects of great concern by all interviewed. Locally notorious for being extraordinarily dangerous at night, with even one person having been mugged and stabbed in their right shoulder blade behind the Red Lobster on the Standiford Trail about seven years ago. These spaces are fraught with regular vandalism, so the few safety features implemented (call boxes and lights) are typically mutilated or destroyed. As beautiful as these spaces can be during the day, they are not a reasonable or safe pathway for alternative transportation or even recreation during night hours.

Conclusion

Automobile ownership continues to remain the social expectation in Modesto as its dominant position in the zeitgeist remains. Every resident interviewed, of each age group, became visibly excited when asked what their favourite car was but not so for parks, inner-city trails, or bike routes other than city Transportation Designer Jonathan Caldwell. Bicycle usage is viewed as recreational or a last-resort option for survival, not as a viable, comfortable long-term choice for daily transportation needs. The same can be said for the MAX bus system, with interviewed residents stating egregiously long headways, concerns of security, and schedule inconsistencies as fundamental issues preventing greater usage. Walking is for aging suburbanites warming themselves in the rising sun, teenagers, and those who cannot drive. One feels out of place walking around, despite the presence of uniform sidewalks throughout nearly the entire city. This persistent feeling can be attributed to the lack of connectivity between transportation modes resulting in degrading walks filled with confusion and discomfort at best, and at worst, physical distress.

The car is so naturalized as a part of life that the concept of living without one is found daunting by most interviewed in this study. However, opposition to reconfiguring roads for better pedestrian and cycling use seems to have lessened significantly, but a strong aversion to visibility and line-of-sight tricks commonly found with new, multi-modal transportation infrastructure remains. From the limited scope of this research, I cannot ascertain if this is a positive indication for alternative transportation mode redevelopments. Alterations such as greater road dieting, car-free zones, red carpet bus lanes, and other mass transit innovations are invasive to car space, and with

the well-established culture of automobility, and city identity thereof, it is difficult to say if these changes could be quickly implemented within the Modesto urban landscape.

This musing leads to the notion that perhaps a system-wide proposal ought to be brought to the public for a vote, much like that of the original San Francisco Municipal Transit Authority and Bay Area Rapid Transit plans to form the agencies and systems. This could prove to be a viable way forward, instead of short-term improvements and small expansions hoping to fly under the radar. Interviewed residents all mentioned some disgruntlement with constant, seemingly uncoordinated construction "tearing up perfectly good pieces of road". The disjointed system almost seems to argue against further active and pedestrian transportation investment in some aspects, leaving residents struggling to imagine a reasonable, non-car based transportation network that is not straining and unpleasant. Perhaps a comprehensive plan would be better for community understanding and even rallying support behind the proposal. It could also provide a tangible target for opposition to rally against, as well. Far more research focused on this aspect must be conducted.

Oddly enough, the two youngest age groups all firmly believe the city to be much louder currently than in their youth, whereas the eldest age group remember a much louder city, with largely unregulated high displacement motors being the automotive norm. This suggests that highlighting the noxious effects of automobility may be an effective message in securing support for greater investment in alternative transportation modes. This could find resistance with some residents of older ages as modern cars are lightyears beyond their 1950s and '60s ances-

tors in terms of reductions in noise pollution, emissions, and increases in safety features- possibly leading to the perception that the present situation is “as good as it gets” and not worth upending. However, the city’s hearty enthusiast cycling population is also filled with members of senior age and their safety and security is undoubtedly of some concern to their friends and family- offering a logical response to hesitant objectors.

Security concerns were a pervasive part of each interview, consistently mentioned by interviewees of each age group. Fears (and personal experiences) of harassment and assault were mentioned when riding the bus or walking were discussed. Those who have done, or do, regular walking, cycling, or skateboarding deviate from automobile totalists in their perceptions of safety. Painted buffer lanes were said to be reassuring, but not comfortable. Material quality, continuity, and cleanliness become a grave concern for those with limited funds for tire repairs, medical bills or time off for injuries from falling over jagged concrete, heaved up by ambitious tree roots. Concerns of violence seem to be an issue plaguing mass transit nationwide with pieces regularly running out of media outlets and newspapers across the United States. Clearly, this piece of the puzzle must be understood to develop an effective plan for greater mass transit and multi-modal infrastructure implementation.

Modesto’s multi-modal transportation infrastructure dreams, its diverse demographics and resulting blend of cultures, with its sprawling landscape make it a city worth further study, as it could provide key answers in the pursuit of more effective techniques in gathering support for the implementation of urbanist improvements in sprawled environments.

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