Sept 1, 2015

PA Comp Plan Transport Element – Peak Democracy feedback tool – Extended Comments

Goal T-9 Regional Leadership
Policy T-49: Regional Traffic.

1. Cap the number of commute vehicle trips

Palo Alto is now surrounded by Trip Caps in Stanford, Menlo Park, Mountain View, Sunnyvale, and Cupertino. Palo Alto should consider implementing a Trip Cap to reduce commuting.

A “trip cap” restricts the number of commute trips into an employment site or into an employment area. For example, “Between 7AM and 9AM, Facebook East Campus may have no more than 2,600 vehicle trips. Hourly trip measurement must be provided to the City of Menlo Park, using sensors at driveway entrances. For each trip above the cap, Facebook shall pay a penalty of $50 per day per trip. After noncompliance over 6 months, the fee increases to $100 per day per trip.”

Typical Silicon Valley SOV (single occupancy vehicle) commute mode share is 76%.

The pioneering trip cap was the 1989 Stanford General Use Permit #1. The “GUP” allowed Stanford to grow by 2M square feet, with “no net new commute trips.” As a result, Stanford charges $3.60 per day to drive alone and park, applying that parking revenue to green commute alternatives and incentives. Results: 48% SOV with $107M in parking structures avoided. REFERENCE: Stanford 2000 GUP trip cap: http://stanford.edu/dept/govcr/documents/general-use-permit.pdf , pgs 12-14,19

Mountain View’s North Bayshore Trip Cap requires between 30% to 45% SOV, depending on the density of employment within buildings. One employer faces penalties of $100K for each 1% over the cap. REFERENCE: MTV 2105 N. Bayshore trip cap: http://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=15164

Sunnyvale ‘s Central & Wolfe Trip Cap is to MTV’s Cap, requiring about 50% SOV (35% reduction from ~76%). REFERENCE: Sunnyvale: Central & Wolfe TDM Plan: http://bit.ly/1NSV0Vd

Menlo Park’s East of 101 (Facebook, etc) Trip Cap requires about ~56% SOV (25% reduction), with a $50 penalty/trip/day. REFERENCE: Menlo Park 2013 FB west campus trip cap: pgs 40-46: http://www.menlopark.org/DocumentCenter/View/2342

For Cupertino’s Apple Campus II, the trip cap reduces from 72% SOV down to 66%.

In Irvine, there is an active market “trading trips” between parcels within the greater Irvine Spectrum Center trip cap area.

2. Align with State 2040 transport policy to project the climate.

CTP2040 Alt 3 (California Transportation Plan 2040, Alternative 3):
* 2040 transport GHG = 20% of 1990 emissions.
* Accelerate transport electrification.
* Reduce driving by 17.3% (reduce VMT by 17.3%)
* Convert HOV2 to HOV4 – convert two-person carpool lanes to four-person
* Double transit & biking.
* “Road capacity enhancing strategies were rejected due to concerns these would ultimately increase VMT.”

3. Mobility as a Service.
Support the City of Palo Alto / Joint Venture Silicon Valley Mobility as a Service Project.

Mobility as a Service (MaaS) envisions a seamless, door-to-door combination of transportation modes—public and private transit, bikeshare, rideshare, carshare, vanpool, taxi, employer commute benefits, electric scooter/bike lease, pay-by-phone parking, future robo-taxis—to reduce private auto usage. A "Mobility Aggregator" gathers all services into a unified smartphone app with easy fare payment, one-stop billing and integrated employer subsidies. MaaS dissolves the boundaries between different transport modes, providing a more customer-centered experience while improving the efficiency of the entire transport system.

Bay Area employers provide a range of customized employee programs to facilitate commuting: transit passes, Wi-Fi motor coach service, last mile shuttle buses from transit, payroll subsidies and more. Our MaaS Project aspires to accelerate software integration between mobility apps and employer programs.

Stanford University has an exemplary commute program. Stanford's $3.60/day parking charge that funds such incentives as the Marguerite shuttle bus and Caltrain GoPass has reduced single occupancy vehicle (SOV) commuters to 48 percent and has eliminated the need for $107 million in new parking structures.

Working with employers, PA & Joint Venture will undertake various revenue-neutral pricing experiments to accelerate MaaS adoption.

Goal T1: Less SOV

4. Acknowledge that it is very hard to reduce SOV (single occupant vehicles)

The front section of the Transportation Element should acknowledge that we are addressing a very difficult problem. In the history of auto-centered suburbs such as Palo Alto (Joel Garreau calls out Palo Alto as an Edge City), there are few examples of switching folks away from driving alone and few examples of significantly reducing traffic. We have to try very hard to innovate, but it won't be easy.

Palo Alto's auto-centered commuting stats:
https://pbs.twimg.com/media/B0KbBu4CAAAhBO4.png

It is difficult to shift travel behavior in Silicon Valley and other suburban US locations. It is difficult to launch successful mobility services in auto-centric locations. The chances for success of these systems will be greatly enhanced if demand can be increased. Long-range California state policy increases demand, so is enabling. The creativity within the mobility service ecosystem is very encouraging. The availability of big transport datasets is enabling, allowing for pre-launch analysis of whether critical mass can be achieved. The lower demand for auto ownership by Millennials is enabling.

4A. Silicon Valley is extremely auto-centered.

It is easy for folks to get around without a car in Helsinki, but many times more difficult in Silicon Valley:
https://pbs.twimg.com/media/CGCLK4uUgAALWMT.jpg

As SPUR's analysis concluded, 75% of Bay Area jobs are located close to freeway exits - on top of various other auto-centered challenges, our sprawling human settlement pattern thwarts transit.
The hourly operating cost of a public transit bus is in the range of $135. For private transit with lower labor cost, that cost drops to about $80. Public transit requires taxpayer subsidy, private transit has to break even. New buses cost $500,000. Currently the economics are very difficult for both suburban public and private bus transit. As far as GHG, standard 50-passenger buses get 6 mpg (8 mpg per hybrid). A Nissan Leaf carpool filled with four people gets about 480 miles per passenger per gallon (equivalent). That is pretty hard to beat, except via bike.

Alternatives to driving alone have a hard time succeeding in Silicon Valley. Only 1 out of 1,000 trips is provided by Lyft/Uber. There is limited scale for that great new "on-demand, smartphone-dispatched, cross-city shuttle" that suburbanites repeatedly dream up for their neighbors to ride. Alas, we cannot even point to a single successful suburban US system of this sort.

Given many past failures of suburban mobility services, a quantified “success narrative” should be developed before new services are launched. In 2015, we should not be repeating past failures. Our 7 million Bay Area residents take 28 million trips per day. There are now robust datasets of these trips that allow for system simulation to forecast waiting times, ridership, business model inputs, and “whether critical mass can be obtained.” It is undesirable to launch a new service without first developing a success narrative.

Stanford’s Marguerite shuttle bus system is one of the most popular in the US. This system has high suburban demand because Stanford charges $3.60 per day to park. Without parking charges, demand would be much lower.

(See also Section below, “Exceptions to auto-centricity” for exceptions to the auto-centricity rule by Stanford, SRI, Facebook, SurveyMonkey, Google, etc)

4B. McKinsey GHG Abatement Curve

Image: http://www.altenergystocks.com/assets/McKinsey%20Graph.png

For climate protection (and traffic relief), there are many policies that are “cost-negative,” such as energy efficiency retrofits of buildings. At this point, policy-makers prefer cost-negative and low-cost ($20/ton or less) policies.

In comparison to cost-effective policies, policies that cost $1,000 per ton represent a questionable spend of scarce financial resource. Some public transportation expansion projects are in the $1,000+ per ton range. Beware. Within transport, carpooling/ridesharing, biking, walking, telework, filling empty seats in existing public transit, private sector mobility services, and driving price increases can be exceptionally cost-effective.

4C. Exceptions to auto-centricity

Stanford University has reduced SOV commute mode shift dramatically. The cost of “A Lot” parking permits is roughly $3.60 per day. Stanford provides one of the richest set of commute incentives, including Caltrain commuter rail passes and one of the US’s higher ridership local shuttle bus systems. Commute mode split has recently been re-calculated to about 49%. Past reporting gave the split as: 41.9% SOV, 23.6% Caltrain commuter rail, 13.9% bike, 8.4% carpool, 7.5% bus, 3.1% walk. As Stanford grew, trip reduction avoided $107M in parking space construction costs

Where jobs for knowledge workers can be located very near Caltrain stations there is significant behavior change. Palantir does not charge for parking like Stanford, yet achieves about 38% SOV mode share. SRI (by Menlo Park Caltrain) achieves 59% SOV.

Throughout the entire US, there are a handful of “effective but expensive” trip reduction programs that provide free workplace parking (and are not located next to Caltrain): Google Mountain View at 52% SOV, Genentech South SF at 58%, Facebook Menlo Park at 59%, and Microsoft Redmond at 62% SOV. These programs often have a Human Resources cost justification because employees work productively during their green commutes on WiFi-enabled buses. The cost of these programs is out-of-reach of the vast majority of US employers.

5. Acknowledge Stanford Research Park (SRP) dominates Palo Alto’s transport footprint.

Downtown has a much smaller impact. Local politics focus on downtown, but the Transportation Element should focus more on SRP.

Policy T1: land use for reduced driving

6. Low-driving, affordable-by-design (unsubsidized) transit-oriented Microunits

When adding new housing, minimize driving and GHG:

Low Driving Housing: 300 square foot downtown & Cal Ave micro-apartments for seniors, singles, and tech workers. 66% less driving (or less) and 75% less GHG than current residents. Average Palo Altan drives 26 mi/day, change this to 9 mi/day in an EV. Live/shop/work in downtown. Own fewer cars & use transit more. Zipcar, transit pass, unbundled parking, EV charging. Property taxes provide school budget surplus. Small square footage housing is "affordable by design" without subsidy.

Low Impact Housing Summary Image: https://pbs.twimg.com/media/B0p8uBEIYAEuBa-.png

In San Francisco, 160 microunits at "The Panoramic" have 0 cars, no parking for cars, and 180 bikes. http://www.panoramic.com/cityspaces-location/mission-san-francisco/

EFFECTIVE RESIDENTIAL DRIVING REDUCTION WITH TEETH:
* Unbundled residential parking with minimum cost of $2 per day
* Parking maximum of <= 0.5 parking spaces per home (Transform's GreenTrip database will help inform this.)
* Zipcar (See Tranform's info on carsharing - http://www.transformca.org/sites/default/files/carshare.pdf)
* Transit pass (Boulder's residential EcoPass yields 40% less VMT than non EcoPass neighborhoods. San Mateo provides residential transit passes; Caltrain and VTA offer them; there are also examples with good results in San Jose documented in TransForm's parking database)
* Bike infrastructure
* Carpool matching
* Developer obtains credit for off-hour shared parking (https://lh6.googleusercontent.com/-Hcoc8X98gUU/VB78jYiS3WI/AAAAAAAAAFA/En23eKco7ps/w506-h350/sharedPkgn.png) with transit or office parking (Caltrain has allowed this at San Antonio in Palo Alto and Station Park Green in San Mateo)
* Follow Berkeley's example of "no car" apartment lease agreements
* Follow the example of Stanford West Apartments (from GUP #1), where preference is given to new residents who will drive less (http://www.cities21.org/workerHsng.htm). Such green travel preference is legal under the Fair Housing Act and eliminates 1+ SOV commutes per home – the most cost-effective residential TDM (transportation demand management) policy in existence. (Apartments/condos are priced to ensure a waiting list.) Of the Stanford West units, 95.5% work and live at Stanford. Without green travel preference, it is more green to build office TOD (transit oriented development) than residential TOD.
Housing preference must not have a "disparate impact" on "protected categories." The biggest concern is impact on Latinos and African Americans.

Effective residential trip reduction for suburbs is a novel concept. New CA CEQA will focus on VMT per capita and commute mode share, not local intersection traffic (LOS). Leaning on TCRP #102, microunit per capita VMT will be 9 miles/day (like Portland's Pearl District transit oriented development), not the US average 26 VMT per day

While pioneering Low-impact Housing in PA, performance must be measured to validate per capita reductions in VMT and energy consumption. (Per Palo Altans for Sensible Zoning, "Institute measurement systems to gather valid, real-time, continuous, and ongoing data that will facilitate better decision making by City government.")