Appendix F

RWCmoves

Recommended General Plan Amendments and Updates to Engineering Standards

Revised: July 10, 2018

FEHR PEERS

Redwood City California Founded 1867

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Recommended General Plan Amendments and Updates to Engineering Standards

Redwood City's General Plan lays the groundwork for the Citywide Transportation Plan and generally includes policies and implementation programs that support the vision and goals of RWCmoves. However, some updates to the General Plan will be necessary to ensure complete consistency with RWCmoves. This report describes the General Plan transportation policies and programs that should be amended as part of RWCmoves.

In addition, this report includes recommendations for, and additions to, Redwood City's engineering standards to align with current best practices.

Modified General Plan Policies and Programs

Table F-1 below, describes the primary General Plan transportation policies that should be amended to further its transportation goals.

While **Table F-1** highlights major policies that should be revised, a careful review of all General Plan policies should also be conducted to incorporate any minor edits to fine-tune the policies in the General Plan.

Table F-1: Recommended General Plan Policy Amendments[1]

2010 General Plan		Proposed Amendment
Policy Number	**Policy Text**	
BE-25.3	Support using the concept of complete streets to design, construct, operate, and maintain City and private streets to enable safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages, abilities, and preferences.	~~Support using the~~ Implement a complete streets policy to design, construct, operate, and maintain City and private streets to enable safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages, abilities, and preferences.
BE-26.2	Develop and maintain comprehensive master plans for the citywide bicycle and pedestrian networks to identify short- and long-range policies, programs, and improvement projects that will improve walking and bicycling.	Develop and ~~maintain~~ implement a Bicycle Master Plan and Pedestrian Master Plan ~~comprehensive master plans~~ for the citywide bicycle and pedestrian networks to identify short- and long-range policies, programs, and improvement projects that will improve walking and bicycling.
BE-26.11	Prioritize implementation of pedestrian and bicycle improvements near schools, transit, shopping, hospitals, and mixed-use areas with higher pedestrian concentrations.	Prioritize implementation of pedestrian and bicycle improvements near schools, transit, shopping, hospitals, and mixed-use areas with higher pedestrian concentrations by updating the City's pedestrian and bicycle Active+ models every two years.
BE 29.5	Support re-evaluation of the City's Level of Service (LOS) policies for motor vehicle circulation to ensure efficient traffic flow and balance multi-modal mobility goals.	~~Support re-evaluation of the City's Level of Service (LOS) policies for motor vehicle circulation to ensure efficient traffic flow and balance multi-modal mobility goals.~~
BE 29.6	Develop a new Level of Service (LOS) policy for Downtown that includes the following components: Emphasis on pedestrian and bicycle access and circulation Maintenance of appropriate emergency vehicle access and response time Support for reduced vehicle miles traveled Considers, but does not deem, auto congestion Downtown to be an impact	~~Develop a new Level of Service (LOS) policy for Downtown that includes the following components:~~ ~~Emphasis on pedestrian and bicycle access and circulation~~ ~~Maintenance of appropriate emergency vehicle access and response time~~ ~~Support for reduced vehicle miles traveled~~ ~~Considers, but does not deem, auto congestion Downtown to be an impact~~

Table F-1: Recommended General Plan Policy Amendments[1]

2010 General Plan		Proposed Amendment
Policy Number	**Policy Text**	
BE 29.NEW	N/A - New Policy to support General Plan and RWCmoves policies.	Mobility Evaluation. Develop new guidelines that effectively evaluate mobility for all modes of transportation. The guidelines should consider the following: Remove minimum vehicular LOS standards (i.e. LOS D) as the primary measure for impact assessment Evaluate Mode Split Goals and Vehicle Miles Traveled (VMT) to assess mobility in Redwood City. Only consider vehicle and multimodal LOS operations as a means to evaluate site specific effects of added traffic and to identify potential improvements Implement the TIA Guidelines in Appendix A to evaluate the project access points, and connectivity to the existing adjacent bicycle, pedestrian, vehicle, and transit facilities.
BE-31.4	Support implementation of a citywide or areawide TDM program.	~~Support~~ Implement~~ation of~~ a citywide ~~or areawide~~ TDM program and form a Transportation Management Association (TMA) as outlined in Appendix E.

Notes:

1. Adoption of RWCmoves does not approve any revisions to the General Plan, these are identified as immediate next steps in RWCmoves on page 103.

Modified General Plan Implementation Programs

The City's General Plan includes a number of implementing programs to support its policies. Several of the programs would also need to be amended, and new ones adopted, as part of RWCmoves implementation. The proposed amended and added programs are outlined in **Table F-2**. As with General Plan policies, a careful review of all existing General Plan programs should be conducted to incorporate any minor edits to fine-tune the General Plan's programs.

Table F-2: Recommended General Plan Implementation Program Amendments[1]

2010 General Plan		Proposed Amendment
Program Number	**Program Text**	
BE-39	**Transportation Funding Prioritization.** Develop an overall policy to prioritize funding and timing for implementing transportation improvements. Consider prioritizing multimodal projects that provide the most benefit to all users. Also, account for other potential funding sources where feasible.	**Transportation Funding Prioritization.** ~~Develop an overall policy~~ Implement the performance measures for RWCmoves to prioritize funding and timing for implementing transportation improvements. ~~Consider prioritizing multimodal projects that provide the most benefit to all users~~. Also, account for other potential funding sources where feasible.

Table F-2: Recommended General Plan Implementation Program Amendments[1]

2010 General Plan		Proposed Amendment
Program Number	**Program Text**	
BE-55	**Level of Service Policy Evaluation.** Evaluate Redwood City's current Level of Service (LOS) policies for motor vehicle circulation. The evaluation shall consider the following to ensure efficient traffic flow and balance multimodal mobility goals: Maintaining LOS D or better for motor vehicles in all areas of the City, except the Downtown area as defined by the Downtown Precise Plan. In Downtown, no minimum vehicular LOS standard will be maintained but vehicular LOS will be calculated and alternate LOS standards for other travel modes will be established. Explore other areas of the City where vehicular LOS standard would either be lowered or eliminated. These areas may include gateway intersections providing access into the City, freeway ramps, or along Transit streets including the proposed streetcar corridors. Consider the effect of potential mitigation measures to improve vehicle LOS on the operations of other travel modes. Evaluate the potential for elimination of vehicle LOS as the primary measure of impact assessment for developments in parts or the entire City.	~~**Level of Service Policy Evaluation.** Evaluate Redwood City's current Level of Service (LOS) policies for motor vehicle circulation. The evaluation shall consider the following to ensure efficient traffic flow and balance multimodal mobility goals:~~ ~~Maintaining LOS D or better for motor vehicles in all areas of the City, except the Downtown area as defined by the Downtown Precise Plan. In Downtown, no minimum vehicular LOS standard will be maintained but vehicular LOS will be calculated and alternate LOS standards for other travel modes will be established.~~ ~~Explore other areas of the City where vehicular LOS standard would either be lowered or eliminated. These areas may include gateway intersections providing access into the City, freeway ramps, or along Transit streets including the proposed streetcar corridors.~~ ~~Consider the effect of potential mitigation measures to improve vehicle LOS on the operations of other travel modes.~~ ~~Evaluate the potential for elimination of vehicle LOS as the primary measure of impact assessment for developments in parts or the entire City.~~

Table F-2: Recommended General Plan Implementation Program Amendments[1]

2010 General Plan		Proposed Amendment
Program Number	**Program Text**	
New-1	N/A - New Program to support General Plan and RWCmoves policies.	**Vision Zero.** Adopt a Vision Zero policy and create a Vision Zero Plan to develop a framework to reduce collisions in Redwood City.
New-2	N/A - New Program to support General Plan and RWCmoves policies.	**Curbside Management.** Develop and implement curbside management strategies to allow for efficient and safe use of TNCs and other on-demand transit services.
New-3	N/A - New Program to support General Plan and RWCmoves policies.	**On-Demand Transit Service Pilot Program.** Develop and implement an on-demand responsive pilot program with service provided by a TNC vendor.
New-4	N/A - New Program to support General Plan and RWCmoves policies.	**Automated Vehicle Management.** Develop and implement automated vehicle management strategies to allow and accommodate for automated vehicle technology in ways that provide a net benefit to the public.
New-5	N/A - New Program to support General Plan and RWCmoves policies.	**Electric Vehicle Encouragement.** Develop and implement electric vehicle (EV) encouragement programs that educate, incentivize, and support use of EVs.
New-6	N/A - New Program to support General Plan and RWCmoves policies.	**Robot/Drone Delivery.** Develop and implement robot and drone delivery management strategies to allow and accommodate for automated delivery technologies in ways that provide a net benefit to the public.

Notes:
1. Adoption of RWCmoves does not approve any revisions to the General Plan, these are identified as immediate next steps in RWCmoves on page 103.

Proposed Recommendations and Additions to Engineering Standards

This section recommends modifications to Redwood City's engineering standards to align with current best practices. The following design guides were used as reference materials: National Association of City Transportation Officials (NACTO) Urban Street Design Guide, NACTO Urban Bike Design Guide, Caltrans Highway Design Manual (HDM), Caltrans Standard Plans, and Caltrans Complete Streets as references to urban design practices.

Redwood City Current Standards

Redwood City's current standards typically reflect those outlined in the Caltrans HDM, Manual on Uniform Traffic Control Devices (MUTCD), or Caltrans Standard Plans and Specifications. The City's current standards should be updated to reflect more recent guidance for best practices in urban environments.

Industry Standards and Best Practices

Roadway infrastructure in cities is evolving by placing more emphasis on walking, bicycling, and transit use, creating streets that are less dominated by cars and more accommodating of multiple modes. NACTO provides recommendations on how existing streets can be improved to better accommodate pedestrians and bicyclists, allowing each mode of transportation to flow more smoothly and safely through a corridor. By improving the infrastructure of all modes of transportation, Redwood City may benefit from safer, more inviting corridors for all users.

Industry standards and best practices for this study include guidelines for lane widths, bike lanes, sidewalk widths, design vehicle, grading, and intersections. Standards and best practices for each of these are described below:

- **Lane Widths:** Automobile lane widths are often designed within the context of the surrounding land uses, with narrower width in urban, neighborhood, and collector streets to calm traffic and provide room for improved pedestrian, bicycle, and/or transit facilities.
- **Bike Lanes:** Bike lanes are often used on wider streets or those with medium to high traffic volumes. On routes with more bicycle and/or vehicle traffic, protected bike lanes are used, which have painted or physical separation between travel lanes and bike lanes. Green-painted lanes are also used to better define bike lanes, especially at intersections.
- **Sidewalk Widths:** Wider sidewalks in urban areas or adjacent to streets are used to create a friendlier pedestrian environment with amenities, such as benches, trees, and lighting.
- **Design Vehicle:** Current practice defines the design vehicles as delivery truck sized vehicles, which provides more design flexibility.
- **Intersections:** Compact intersections are those that accommodate all modes of transportation, including pedestrians,

vehicles, and cyclists. Some features to consider include striped crosswalks, bike boxes, curb extensions and bulb outs, and signal coordination.

Recommended updates to the current Design Guidelines as they relate to each of the street typologies are provided in **Table F-3.**

Table F-3: Recommended Design Guidelines by Street Typologies

	Boulevard	Neighborhood Main	Connector	Neighborhood	Industrial
Lane width	10-11′	10-11′	10-11′	22′	12′
Bicycle treatments	5-6′ with 3-5′ min buffer	On street with traffic calming or 5-6′	Sharrows with traffic calming or 5-6′ with 3-5′ min buffer	On street with traffic calming	Sharrows with traffic calming
Sidewalk width	8-10′	8-20′	8-10′	5-10′	6′
Design vehicle	BUS-40	SU-30 or DL-23	BUS-40 at major intersections	DL-23	Varies
Example Intersection Treatments	Refuge islands, bike boxes, protected intersections	Curb bulbs, community-focused crosswalks, art	Refuge islands, high visibility crosswalks, reduced lane widths	Curb bulbs, traffic circles, raised crosswalks	Truck aprons, 4-way stops

Source: CDM Smith, 2017