

## Transcript of the Video

### Welcome to the Flow Boulevard Animation

This is a look into the future of the LA Basin, where the new Flow Boulevard system would provide a major transportation improvement, which can serve the higher density that is being developed there.

The video describes a future roadway 15 years or more from now, where the travel demand for the increased infill development has been met with the evolved roadway, and some likely improved vehicular performance with the help of Artificial Intelligence. The Flow Boulevard system features continuous flowing traffic, a safer traffic condition, a higher roadway capacity, and Bus Rapid Transit on Flow Boulevards that would serve the higher density in the LA Basin.

The Flow Boulevard innovation also provides follow through objectives for commuters of the Metro Long Range Strategic Plan, which uses transit and freeways. This would occur by connecting those commuters to the higher density of infill development on Flow Boulevard corridors that would occur in the LA Basin as it is intended to have. And the new traffic structure of the Flow Boulevard can incorporate continuous flow travel for buses making Bus Rapid Transit in Los Angeles, without wasteful dedicated lanes as the Metro Nextgen Bus Plan is forced into, by narrow existing boulevard rights of way.

What you see now is a plan view of a segment of Flow Boulevard which represents the new kind of urban boulevard featuring continuous flowing traffic. It is made from existing boulevards and up grades conditions of safety, increases the capacity for moving traffic so it avoids congestion, and creates a structure of mobility that supports many kinds of improvements to shape community development and socio-economic opportunities.

The animation will stop momentarily while an overview of what the Flow Boulevard system is made of, prior to seeing the full video of animated traffic and the explanatory narrative of traffic movements and comments.

In the Flow Boulevard system there are two kinds of Flow Boulevard roadway configurations that give the two directions of flowing traffic. There is the Single Street Flow Boulevard which has opposing lanes of traffic separated by a median in the single roadway. Secondly, there is the Couplet Flow Boulevard which is a pair of one way streets separated by a city block or more. What this video shows is the operation of the Single Street configuration in that this is the primary innovation upon which a U.S. patent has been awarded for the making of the new Flow Boulevard system featuring continuous flowing traffic. The Single Street Flow Boulevard connects to Couplet Flow Boulevards, which are much easier to provide Continuous Flowing Traffic on. When linked together they can allow a large network to be formed of Flow Boulevards in the LA Basin for example, given its various street patterns. The Couplet Flow Boulevard is used in the grid of streets pattern where there are parallel streets, and the Single Street Flow Boulevard with two way traffic, is used where there are no parallel streets available to make a Couplet Flow Boulevard.

The basic one mile long segment of the Single Street Flow Boulevard has a crossing roadway and intersection occurring where the traffic signal defines the two phases of traffic operation which are, the Continuous Flowing Traffic phase, and secondly there is the Stop and Go traffic phase. These are where a green light for the Flow Boulevard defines the Continuous Flowing Traffic phase, and a red light for the Flow Boulevard defines the Stop and Go traffic operation phase, which completes the basic signal cycle, that then is repeated.

In the video, the continuous flowing traffic is represented as red vehicles and as you will see in the video, they don't stop unless they move to the Stop and Go phase condition. In this Stop and Go vehicular traffic phase there are a variety of local traffic movements made, represented by blue vehicles.

The video example has a 120 second traffic signal cycle that has these two types of traffic operating within it, and it's basically divided 50% of the time as continuous flowing traffic and 50% of the time which has stop and go traffic for local traffic movements. The major crossing street intersection occurring at one mile intervals, therefore gives an example of 30 mph continuous flowing speed on the Flow Boulevard.

The two minute video will be looped five times to explain further aspects occurring in the two different traffic conditions.

The image shown now is the plan view of the Single Street Flow Boulevard running horizontally and is being crossed at a major crossing street intersection which controls the basic signal cycle for that segment of Flow Boulevard. The crossing street is running vertically on the plan view. The opposing Flow Boulevard traffic lanes shown in blue cars set back from the intersection crosswalk in each of the traffic directions. The set back space is an acceleration zone which the pack of blue vehicles will move into at the start of the two minute signal cycle. Take note of the signal cycle clock in the lower right hand corner of the plan. And there are video controls which exist in the lower center of the plan so you can stop and start the video as well as turn back the sequence of images and dialog.

There are TWO MAJOR new points that are to be made in the video. First, the Flow Boulevard is a safer roadway because of the separation of the two different forms of traffic which reduce the potential for accidents by not mixing fast and slow vehicles together. This new major point is illustrated with the flowing red car vehicles all traveling at the same speed in the Continuous Flowing Traffic phase of the signal cycle and are separated from the blue vehicles of the signal cycle in the Stop and Go traffic phase.

The second major point is that with continuous flowing traffic, the Flow Boulevard can become the practical basis of building a Los Angeles Bus Rapid Transit system. Until now Bus Rapid Transit has not been made because to be rapid, buses generally require dedicated lanes, which would be an additional two lanes to be added to the corridor. But there is not enough room on most existing boulevards for that to occur in Los Angeles. To swap out a traffic flowing lane for an exclusive bus lane becomes a big loss of roadway capacity. However, with the Flow Boulevard innovation, bus traffic can join the Continuous Flowing Traffic phase of traffic flow to become the fast and safe Bus Rapid Transit travel that will attract bus ridership. So the Flow Boulevard becomes a remarkable discovery to allow such an increase in person trip capacity using Bus Rapid Transit within the narrow existing Los Angeles boulevard rights of way which will allow affordable transit that is fast and convenient. This is an important breakthrough for the Los Angeles transit to have express buses with

continuous flowing travel to specified station locations, as well as having buses in the Stop and Go phase serving local riders which can be connected to the fast and convenient Bus Rapid Transit service. This important breakthrough could not have happen in Los Angeles except for the innovation of the Flow Boulevard system that incorporates safe, Continuous Flowing Traffic.

Now the first cycle of the 5 animated traffic movement loops, begins. The traffic signal cycle begins this animation with the opposing packs of gathered blue vehicles accelerating on through the intersection while the continuous flowing pack of red vehicles behind them in each direction are catching up to the slower blue vehicles. The red and the blue packs merge BLING, then the vehicles are all red and all going the same speed as they are now all a part of the Flow Boulevard continuous flowing vehicular traffic. This is the way vehicular access is gained into the Continuous Flowing Traffic, which includes the buses that will be the basis for making Bus Rapid Transit in Los Angeles as well.

All vehicular modes are accepted on the Flow Boulevard. This is necessary in Los Angeles in that many people are auto dependent because of where they live. The Hollywood Hills having no transit is an example, and there are isolated residential areas on the flat parts of the Basin where people would need, and or prefer, car travel. Then there are various trucks, service and emergency vehicles, that will need fast dependable roadways as well. The objective is to serve everyone's needs.

The chosen speed limit of 30 mph, which is also the minimum speed limit for Continuous Flowing traffic, in this example, guarantees there would not be speeding by vehicles. What is shown is 65 feet separation between vehicles. The staggard pattern is so vehicle directional signals can be seen by drivers to accommodate lane changes. As seen here, the closeness of the vehicles would not be seen for many years. The pattern to start with would be much looser with fewer vehicles.

As previously stated, the rapid bus transit can use the first part of the signal cycle for fast and safe travel and keep slower moving stop and go traffic out of its way by separating it into the second half of the signal cycle. That is the basis for safe Bus Rapid Transit in Los Angeles by adding person trip capacity and not losing any space of the roadway. Buses move in

continuous flowing traffic and are not being obstructed by slow and turning movement traffic.

In the Stop and Go phase, local bus operations can be in safe light traffic conditions, where there is plenty of space between vehicles. The local bus traffic can join the Continuous Flowing traffic phase, to become part of the Bus Rapid transit phase by using the merging operation with the flowing packs as previously viewed at the beginning of the signal cycle animation.

By not using center of the street rapid transit lanes, as they do in South America, the Flow Boulevard buses with the doors on the normal right side of the bus, for boarding and discharge of bus passengers, can accommodate the same kind of regular boulevard buses to connect with the Flow Boulevard Bus Rapid Transit lines. This integrates Rapid Transit and regular buss lines citywide. Expect Bus ridership in the LA Basin to expand by 1000% by Flow Boulevard Rapid Transit use over a period of transitional years. What is shown in the video is one bus per minute in each direction of travel.

The best way to represent bike travel is to make large bike networks in residential areas like Portland Oregon has made, with their Green Ways network which are basically Sharrow lane networks through residential neighborhoods. They provide the right connection to schools, parks and all kinds of community services that would present the necessary safe conditions for young to older bike riders alike.

Another design integrating travel demand function, that could be seen, is the use of buses on freeways that could be connected to Flow Boulevards in what are now highly congested conditions, such as in West LA in the 405 corridor. Preliminary work shows that a Couplet Flow Boulevard, straddling the 405 in West LA, solves the congestion on the regular boulevards that connect to the 405 and also the congestion on the 405 itself.

The Stop and Go phase is generally designed for local traffic movements and pedestrian crossing of the Flow Boulevard. See the right turns into and out of the Flow Boulevard by local vehicles. Also see the left turning movements into the left turn pockets taking place into and out of the median by the local traffic blue vehicles. And there are pedestrian crosswalks connected to the median which provides protection from traffic. The median also allows minor Flow Boulevard crossing by local traffic. And

this phase also contains the major crossing street traffic at the intersection that defines the two basic traffic phases of the Single Street Flow Boulevard.

Existing capacity on a single street regular boulevard is about 30,000 person trips per day. With the Flow Boulevard system that can become more like 60,000 person trips per day having free flowing traffic with less pollution. By including Flow Boulevard Bus Rapid Transit an additional 30,000 persons can easily be accommodated. By adding these together that would be 90,000 people moving in the Flow Boulevard corridor per week day. That is a 300% increase over existing person trip capacity, giving a long future to the Flow Boulevard utility.

So the Flow Boulevard is a remarkable discovery to allow such an increase in person trip capacity as well as being Bus Rapid Transit. Integrating bus use on regular boulevards expands transit use, and to connect buses on freeways to a Flow Boulevard Network in the LA Basin which connects to Union Station rail, allows affordably built transit expanded service for all of Los Angeles transit users.

A Flow Boulevard efficient Bus Rapid Transit system capable of interrelating all forms of mobility can be used to problem solve in various communities in different ways, by their different connections of mobility. In some communities it is freedom from congested traffic that is important, as is cut through traffic, through residential areas which is important to remove. In other areas it is important to provide mobility to be connected to other areas, that is necessary. The variability of adjacent land use relationships are of great importance. Corridor studies are the way to work quickly to get the structure in place for community improved environmental quality, social opportunity as well as improved mobility. It is a matter of analyzing what needs to be done as the citizens in that community communicate it, and to make rational plans to meet those needs.

Regarding the Couplet Flow Boulevard:

The next video to be made would want to show a Single Street Flow Boulevard connecting to a Couplet Flow Boulevard making that fact evident. The Couplet Flow Boulevard which has one-way streets is easy to develop Continuous Flowing Traffic upon it. The one-way streets use progressive signalization for traffic signal timing. One-way streets do not

have required spacing of the traffic signals as the Single Street Flow Boulevard must have. Any one-way street can be timed to have continuous flowing traffic. As the red car packs of Continuous Flowing Traffic approach a signal, on a one-way street, the traffic signal simply is made to turn green to start the Flow Boulevard signal cycle timing to begin. There does not have to be synchronized timing on a one way street of opposing traffic to go through the intersection simultaneously because there is not any opposing traffic on a one way street.

All these roadway conditions need to be studied further for additional discoveries, for safety and for the socio-economic opportunities that are afforded in what are essentially low cost improvements when compared to the alternatives of widening roadways or making a grid of Subways that would take too long, cost too much, and never pay for their own required big subsidies forever. Flow Boulevard improvement would pay back their costs in a short matter of time by the increased tax revenues of the new infill development.

With the last few minutes here, I would like to express the importance of getting studies made which lead to plans for a network of Flow Boulevards in the LA Basin. The current homeless problem of people living on the streets has taken the focus away from the long term city planning that must be advanced. The short term homeless problem can be part of the longer process of solving problems and getting plans right. In the longer run homelessness is ended by an improved economy and a well functioning city.

LA City Planning and the Department of Transportation have to bring about a practical plan to receive additional commuters and have it provide an infrastructure plan to support higher density in the LA Basin as well. Metro's objectives and the funding from Measure M to do the studies are already part of Measure M in its defined use, including the construction of approved plans which applies to getting construction in Los Angeles and the related smaller cities.

It is time that Metro's top down planning approach and the bottom up problem solving approach for community plans, using Flow Boulevard corridors in the LA Basin, are made to work together. Flow Boulevards are that practical way to establish a transportation structure that would allow appropriate long term development, solving the commuter connections to

jobs, the development of a bus rapid transit system and for quality of life opportunities in Los Angeles communities to take place.

Flow Boulevards would be convincing improvement to attract community interest and the investors to develop those land uses required to make complete communities along with the resulting tax based funds for civic investments. Also, there would be the fulfilled opportunities of socio-economic betterment that come with well functioning communities.

The two corridors with the most problems, is the place to start. Several communities between Downtown LA along the Sunset to Santa Monica Boulevard corridor to West LA, as well as in the West LA's 405 corridor, are the places to start studies. The different communities would be shown how the Flow Boulevard system having the right scale for solving community problems, could provide that explanation with plans for getting the future of mobility right for each community.

LA City Planning and the DOT have not as yet identified a practical plan to receive additional commuters by freeway and rail. That would include not planning the infrastructure to support higher density within the LA Basin for job development, infill housing for workers and improvements to communities. Metro needs to help out because the LADOT is not providing the follow through of improved distribution and collection of trips with improved infrastructure that completes the connection to what we are having Metro do for commuters with rail and freeways, as well as for what Los Angeles needs for its citizens and communities in the LA Basin. Flow Boulevards, with the new capability for making a Bus Rapid Transit system is the way to start making the necessary plans for improvements.

Thank you for listening to this video.