One of the main transportation issues throughout Dublin is the failure of roads to meet safety, accessibility, and environmental demands during and after periods of rainfall. Streets such as Village Parkway, Amador Valley Boulevard, and Dublin Boulevard are all cambered and impervious. Rainfall quickly pools on the road surface, picking up motor oil and other pollutants before inevitably passing through storm drains and into the Alameda Creek watershed. Furthermore, this road design floods bike lanes as water flows into storm drains, causes motor vehicles to drench cyclists and pedestrians, and increases the risk of hydroplaning. Dangerous bike lane crossings, like at the I-580 West entry ramp off San Ramon Road, become downright treacherous when wet. Many cyclists and pedestrians resort to taking their cars, increasing traffic congestion and pollution while restricting emergency vehicle passage. After precipitation subsides, water imprisoned under the roads creates potholes. Potholes, like those on Dublin Blvd, disrupt traffic flow, are costly to fix, and allow additional infiltration and damage.

The best way to address these problems is completely redesign Dublin's roads using permeable concrete or asphalt, a porous aggregate. A suitable design would consist of a four inch layer of permeable asphalt resting on a four inch layer of fine gravel and a twelve inch layer of coarse gravel. A non-biodegradable, fine geotech fabric would separate the gravel layers from the compacted soil beneath. Several perforated underdrains of about six inches in diameter would be placed in the gravel right above the geotech fabric. All of the underdrains serving a given area would connect to an organoclay and GAC (Granular Activated Carbon) filter housed in a concrete container under the street, which could then be linked to existing storm drain pipes. The treated water could also be reclaimed for irrigation purposes- a practice incorporated in the design of the Lake Merritt Boulevard bridge in Oakland. This system would eliminate all problems related to street flooding and drastically reduce pollution. Rainfall on the street would seep through the permeable asphalt and gravel layers, flow into the underdrain, and pass through the filter. Any remaining water would be directly filtered through the geotech fabric. Maintenance would be limited to occasional cleaning of the asphalt surface and replacement of the recyclable organoclays and GACs; the filters would be accessible via manhole covers on the street. The design as whole would be costly to implement, but its components are proven to resist heavy vehicular traffic and pothole formation for many years, making it cost effective in the long run.

In addition, such a solution would set the foundation for further transportation improvements. Permeable roads would remove the need for camber, curbs, and gutters, allowing additional innovation towards Dublin's goal of Complete Streets. In fact, sidewalks could be demolished, the permeable road extended, and a movable concrete barrier placed to the right of the traffic lanes wherever possible. The latter initiative is already being taken on the Richmond-San Rafael bridge. This design, primarily useful for Dublin's largest streets, would combine the original bike lanes and sidewalks into one wide, safe pathway, mimicking the well-appreciated Iron Horse Trail. At high-risk intersections, adaptive traffic light systems could be placed to protect cyclists and pedestrians. Finally, such a design would help spread bike shares, like those in the East Bay, and bike cages, like those at the West Dublin BART station, throughout Dublin. All these supplementary benefits would motivate people to choose sustainable, healthy, and less infrastructure-damaging ways to get around town.