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**WATERSHED ISSUE IN BRIEF:** Bantay Kinaiyahan is a regular publication of the Interfacing Development Interventions (IDIS), Inc. to provide the public with relevant and concise information on pressing watershed issues.

# REVIVING DAVAO CITY'S BICYCLE ORDINANCE AND INFRASTRUCTURE AMIDST PANDEMIC


In 2009, Davao City's Bicycle Ordinance was passed to promote and provide bicycle users safety, infrastructure services, public facilities, and programs. Despite the passage of the said policy, the provisions of bike lanes and other targets were not implemented due to traffic and structural and system conflicts. As we are all adapting to the 'New Normal' brought by the global pandemic, most people's access to transportation is minimized, allowing many citizens to use bicycles as a very effective and safest way to travel.

However, there are numerous problems with the ordinance that affect bicycle users. These include the long overdue and sudden re-implementation and review of the ordinance, overlapping rules and requirements of existing local policies, lack of bicycle safety support facilities such as bicycle lanes and parking areas, on-the-ground traffic and road issues, obstacles, and risks. With these, the Interfacing Development Interventions for Sustainability (IDIS) Inc. conducted research to help on the amendment of the ordinance towards a green, sustainable, and future-ready city.

The research entitled "Geo-mapping and Assessing Bicycle Mobility in Davao City" started last June 2020 where the city was placed under general community quarantine. The methodologies of this research are the City-Wide Online Survey, Roadway Audit, and Count Survey. There were no face-to-face interviews involved in this research because of the strict health protocol. After two months of research, the results were consolidated. IDIS would like to highlight some results and policy recommendations for infrastructure, public service, traffic management, governance, lifestyle, and culture.

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# BICYCLE DEMOGRAPHY SITUATION IN DAVAO CITY

Age groups were classified according to different stages of human development. Most bicycle users fall within young and mid-aged adulthood. Both online and count surveys show large domination of male bicycle users from other genders. The average ratio of females to males is 1:5. From the online survey, most bicycle users attained college-level education. Occupational fields are variously distributed, mostly fall under online services, government, and medical services or frontliners.

The majority of bicycle users have less than one year of experience in using main roads and highways. Also, 45% have responded to not having a driver's license. Both survey methods present that Mountain Bicycles gained the highest value due to availability, terrain, affordability, and multi-purpose design. Other pedal-powered transportation types found during the count survey were service bikes (taho/balot), trikes, carts/pedal-kariton, and 2-passenger "angkas/sabak" bike.

Based also on the online survey, with regard to ownerhsip, 92% of the respondents own bicycles and most of whom owns 1-2 units. While the rest of the respondents either borrow bicycles or purchased the same through installment. Further, the online survey suggests that helmet, tail lights, and gloves are among the top accessories and equipment cyclists own. However, in the actual Bicycle Count Profile, 82% of the bicycle users were not wearing helmets, and 6% had no lights installed on their units.

The online survey also revealed that the leading reasons why respondents use bicycles are for recreational, sports, and work-related. However, perils on the road like lack of designated bike lanes and irresponsible driving are the common reasons for not using bicycles.

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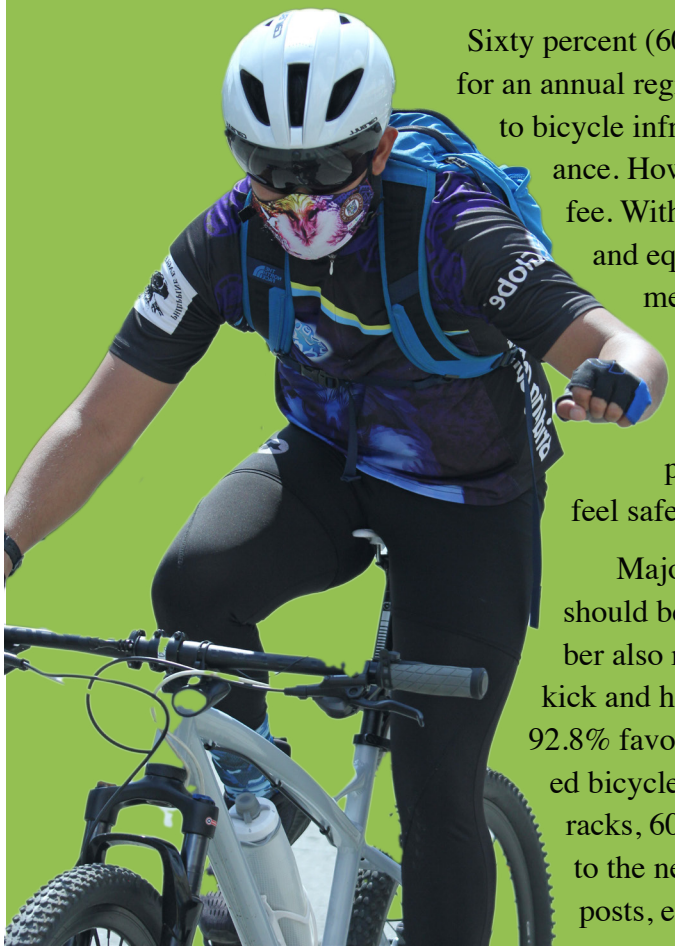
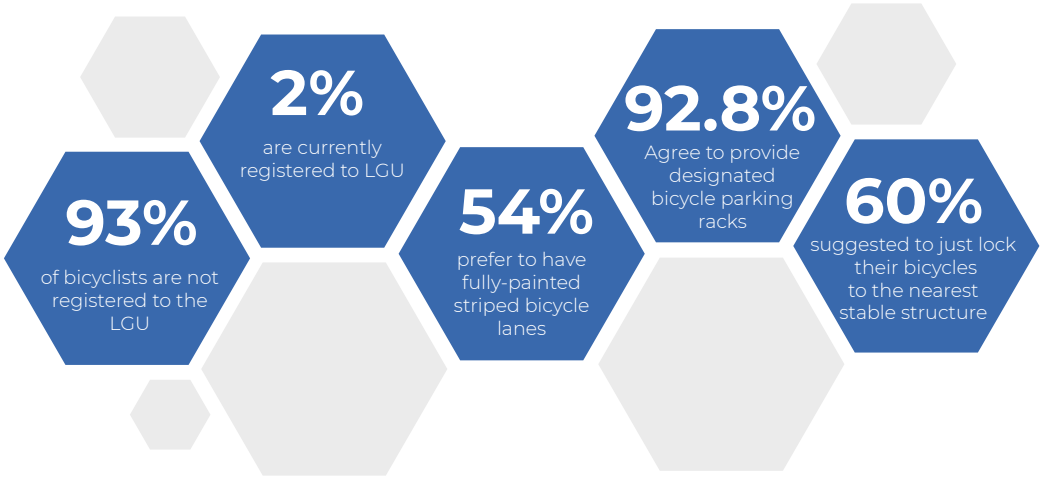
# BICYCLE POLICY, RULES, AND REQUIREMENTS

The study revealed that 93% of bicyclists are not registered to the local government, a measly 2% are currently registered, and few responses showed that other cyclists are registered in other cities. Few responses are registered to other cities and past registrations. Moreover, 50% of the respondents are affirmative in having their bicycles registered, however, 30% of which qualified their answers to not doing it now due to COVID-19 reasons. On the other hand, 40% rejected the bicylce registration requirement.



Sixty percent (60%) (those selected a breakdown) are willing to pay for an annual registration within the range of P20-P150 to be allotted to bicycle infrastructure (bicycle lanes and racks) and user insurance. However, 40% responded not to require a registration fee. With regard to the minimum requirement for accessories and equipment, 49% responded that it should include a helmet, front/tail lights, and horn/bell as respondents find these essential for safety. Fifty-four (54%) percent prefer to have fully-painted striped bicycle lanes, 20-30% responded to have protected lanes such as pop-up barriers and planters. On width, bicycle users feel safe and comfortable with a 2-meter wide bicycle lane.

Majority of the bicyclists respond that bicycle lanes should be exclusive for bicycle users only. However, a number also responded to share with skateboards, joggers, and kick and handicapped scooters. On bicycle parking racks, 92.8% favor on requiring establishments to provide designated bicycle parking racks. For establishments without bicycle racks, 60% of bicycle users responded to lock their bicycles to the nearest stable structure such as PWD ramp railing, posts, etc.



# Mapping, Travel Pattern, and Count Surveys

High concentration of parking racks are found in the city's central business district. According to the survey, the safest and secured areas to leave bicycles are in Abreeza, Alorica, SM Lanang, and City Hall/Public Racks.

Most bicyclists' point of origin are found at residential areas in the city such as Talomo, Matina, and Buhangin while most travel destinations concentrate on the Poblacion Core for work-related travel reasons. This follows the current vehicular traffic movement of the city during rush hours. For recreational reasons, most cyclists travel to Calinan and Toril Districts. Many areas identified with high origin and destinations are without delineated bike lanes. Roads that are most used by the bicyclists are McArthur Highway, Quimpo Boulevard, Poblacion Grid Streets, and J.P Laurel Highway. Currently, a portion of McArthur Highway from Ulas to Matina does not have bicycle lanes.

The highest number of bicyclists were counted at McArthur Highway and Quimpo Boulevard with an interval rate of 1 bicycle per 30 seconds, during rush hours in the morning and late afternoon. According to the respondents, most accidents observed were found at C.P Garcia Highway, Diversion Road, Shrine Hills Road, McArthur Highway, and J.P Laurel Highway. Possible reasons are influenced due to its physical terrain, fast-moving vehicles, and obstructions.

Research has recorded over 80 roadway obstacles including drainage holes, utility posts, non-permanent obstacles such as parked vehicles, and loading/unloading vehicles. J.P Laurel Highway was found to have many utility posts and drainage holes. Torres Avenue found to have many drainages with holes aligned with the same direction of bicycle tires, hence dangerous for bicycles with thinner tires.

## Bicycle Parking Racks

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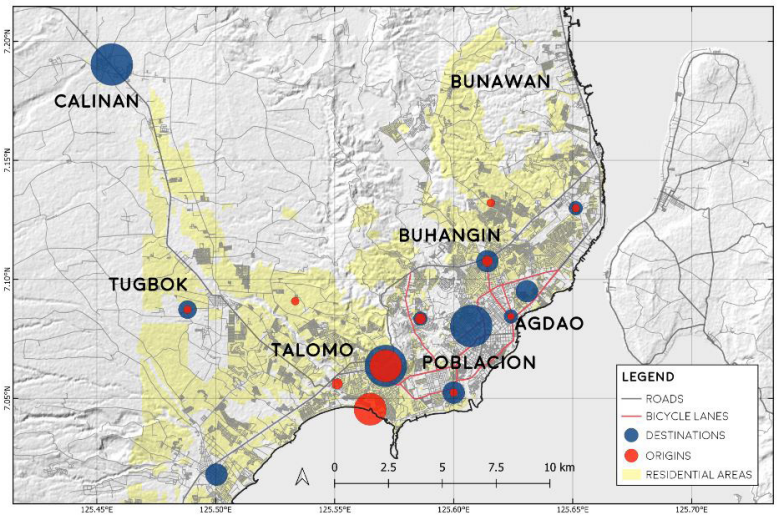
Abreeza

Alorica

SM Lanang

# Travel Destination and Origin of Bicycles

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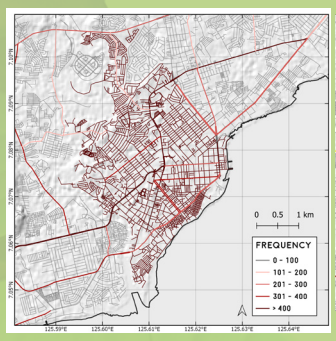
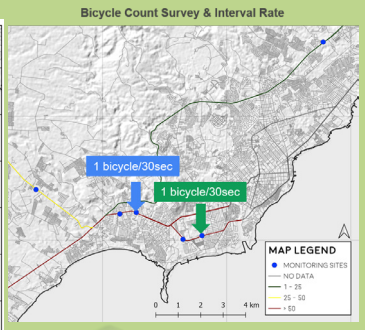
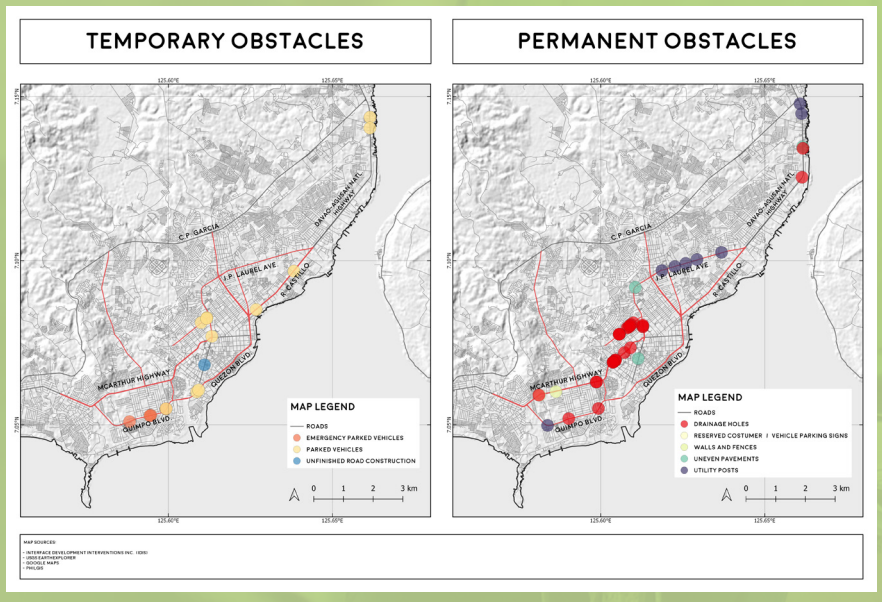
## Bicycle Count Interval

Utrecht Central Station bicycle parking in Netherlands records 2 bicycles/second during a morning rush hour. The researchers followed the same counting tools and formula from the study, and found that the highest bicyclists were counted at McArthur Highway and Quimpo Boulevard with an interval rate of 1 bicycle per 30 seconds, during rush hours in the morning and late afternoon last July to August 2020.




## Accident Count

According to the respondents, most accidents observed were found at C.P Garcia Highway, Diversion Road, Shrine Hills Road, McArthur Highway, and J.P Laurel Highway. Possible reasons are influenced due to its physical terrain, fast-moving vehicles, and obstructions.

## Roadway Obstacles

Research has recorded over 80 roadway obstacles including drainage holes, utility posts, non-permanent obstacles such as parked vehicles, and loading/unloading vehicles. J.P Laurel Highway was found to have many utility posts and drainage holes. Torres Avenue found to have many drainages with holes aligned with the same direction of bicycle tires, hence dangerous for bicycles with thinner tires.

# RECOMMENDATIONS FOR POLICY, INFRASTRUCTURE, AND LIFESTYLE

## INFRASTRUCTURE, PLANNING, AND PUBLIC FACILITIES

Bicycle Lane Network – Provision of bicycle lanes at identified national highways and other city roads for the safety of bike commuters crossing districts.

Barrier-Free Bicycle Lanes – Public works should address the issues on permanent obstacles such as drainage holes, utility posts, and unfinished constructions. Movable obstacles such as parking signs and park vehicles should be strictly enforced.

Bicycle Lane Signage & Width – Clearer signage and fully-coated/painted operating space for at least 2 meters wide.

Well-lighted Bicycle Lanes – Safe and bright lights from light posts for bicycle user's safety at night, switching of higher lumen-LED lights at identified dark areas.

Bicycle By-Pass Path – Require high-traffic establishments such as shopping malls, schools, terminals, and offices to provide a By-pass Path for bicycles next to their loading/unloading areas and bus stops.

Bicycle Yield Areas – Plan and provide bicycle yield areas for the safety of bicycle users in crossing main intersections.

Public Bicycle Repair Station–Provision of bicycle repair stations at public parks and resting areas along identified areas with high number of bicycles.

Bicycle Racks – Improvement of bicycle rack design, public racks, and requirement of establishments. Formulation of ratio on occupancy vis-à-vis rack capacity. Provision of racks at public parks, barangay halls, and government offices.

Urban Streetscapes and Greenery – Enhancement of greenery along bicycle lanes such as providing planter-protected bike lanes, implementation of the adopt-a-street island and pocket, and linear parks as resting areas.

Bicycle Circuit/Network Plan – Connecting bicycle lanes, car-free routes, paths, nature trails, provision of non-main road or low-traffic road bicycle sharrows/lanes, as well as community-level bicycle safe streets for school, parks, and houses.

Bicycle Lane/Path Surface Pavement – For current bicycle lanes, IDIS recommends existing pavements, striped/fully painted with an anti-skid coating. Permeable concrete or asphalt, striped full-painted with anti-skid coating for new road construction projects and closed-void permeable/porous blocks, turfs, bricks for

esplanades and park bicycle paths.

High Priority Bus System (HPBS) & Davao Transport Project – Since the local government plans to shift into HPBS, IDIS also recommends the following: Bicycle Parking Racks/Areas at Terminals; Bicycle carriers and racks installed at each bus unit; By-pass paths at bus stations or loading/unloading areas; Safe bicycle and pedestrian access networks to every terminal and bus stations; Implementation of identified Transit-Oriented Zones; and Public Bicycle Sharing/Rent Systems (e.g. Obike, Kuala Lumpur, Malaysia).

## TRAFFIC SYSTEM AND MANAGEMENT

Public Awareness and Campaign – Mainstream public information on traffic rules on bicycle lanes and other facilities, along with violations and penalties.

Traffic Enforcement – Strict enforcement of parked and temporarily parked vehicles, PUV Loading/Unloading Zones, driving at bicycle lanes, and crossing intersections to ensure the safety of all road users.

Orientation and Continuing Education – Upon registration, bicycle users should be oriented on bicycle traffic laws and safety protocols as well as defensive driving education to motorists and conduct of "Bike Clinics".

## ADMINISTRATION

Registration – Majority of the respondents are willing and in favor of registering their bicycle units but only if the health emergency is already lifted and it is already safe to conduct mass gatherings or that safety protocols are strictly implemented. Online or barangay-level registration is highly encouraged. Bicycle user registration or licensing method is more effective than registering their units.

Registration Fee and Taxes – Majority (those selected a breakdown) are willing to pay for an annual registration within the range of Php 20-150. The local government should allot the taxes to concrete bicycle program and development, maintenance, safety, providing public facilities, and other programs that the bicycle users can benefit from.

Bicycle User Requirements – Basic accessory requirements should include a helmet, front light, tail light or reflector, and a bell or horn.

Harmonization & Enactment of Policies – Review the provisions of both Bicycle Ordinance and Local Traffic Code to avoid overlapping, conflicting, and/or doubling of requirements, fees, violations, penalties, etc.

Policy Inclusivity – The ordinance's rules and regulations should focus on regular bicycle users and consider providing safety to other pedal-powered means such as handicapped specialized trikes, kick scooters, and service carts.

Research and Monitoring – Continue research and monitoring surveys, public surveys, bicycle counts, and obstacle mapping to understand further bicycle traffic and safety problems.

## BICYCLE LIFESTYLE AND CULTURE

Cycling-Oriented City – Encourage bicycles as a primary mode of transportation, not only for sports and recreation. The cycling lifestyle is practical, easy, safe, and simple.

Gender Equality in Mobility – Bicycle mobility comfort and safety should benefit all genders. Halt traffic bullying, discrimination, and catcalling.

Corporate Bicycle Programs – Providing facilities and programs for bicycle-using employees, group rides, parking racks, dressing rooms, renting systems, health & wellness, etc.

# SUSTAINABLE MOBILITY ONLINE FORUM


Last August 26, 2020, IDIS presented the results of the study through an online forum. The forum was a round-table discussion of reactors from cycling advocates, national to local government officials, and public viewers.

After IDIS presented the results of the study, Arch. Illuminado Quinto, a cycling advocate, Dean of University of Mindanao's College of Architecture and Fine Arts Education, and an Urban and Mobility Design expert, presented his outputs entitled "Bicycle Geometry: Sustainable and Safe Bicycle Infrastructure Designs" that are suitable for the city. The City Traffic and Transportation Office (CTTMO) also presented the updates of on-going bicycle route and marking of bicycle lanes project of the city. Advocates from Cycle for Life, Ed Luenberger and Monica Ayala as well as Engr. Agnes Audan from the Department of Public Works and Highways (DPWH), and 1st District Councilor Mabel Acosta were the invited panel of reactors of the forum

In Davao City, bicycle has become an emergency transportation alternative one of the result of COVID-19 pandemic. The City's bicycle safety infrastructure and facilities were not prepared to cater mass bicycle users. Issues from the implementation of policies, registration and collection of registration fees, traffic conflicts, on-ground obstacles, parking safety, lack of bicycle lanes, and other factors that hinder citizens to use their bicycles were documented and analyzed.

The results of the research tell us that Davao City has still a long way to go towards a safe cycling-oriented city. Development should not only stop upon completion of physical infrastructure but should be a continuous planning, implementation, and assessment to meet future demands. The effects and flaws from the car-centric and poor traffic planning should be a major turning point.

People - pedestrian, bicyclists and other forms of micro-mobility are "People-on-Wheels" that must be highly protected. We should aim for sustainable mobility as we continue to work on realizing and maintaining the city's tagline "Life is Here".

INTERFACING DEVELOPMENT INTERVENTIONS FOR SUSTAINABILITY
CLEAN WATER. HEALTHY WATERSHEDS.
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