VAL_04 'To reduce travel times through the implementation of dedicated bus lanes'

Description of the measure and main outcomes expected

The primary goal of VAL_04 is to reduce travel times through the implementation of dedicated bus lanes. To achieve this goal the measure will ensure traffic light prioritization on Blasco Ibáñez Avenue. Traffic light priority elements installed on Blasco Ibáñez Avenue will be integrated to give EMT buses, such as line 81, preferential treatment at traffic signals. This system will use traffic light prioritization beacons to detect the approach of the buses. When a bus nears an intersection, the system communicates with the traffic signal controller to either extend the green light or shorten the red light, allowing the EMT buses to pass through with minimal delay. Measure VAL_04 is integrated into BRT Blasco Ibáñez funded by Next Generation funds, as an independent demonstrative project.

To achieve this, this measure will launch a public contract for the supply and installation of traffic light priority elements for public transport (traffic light prioritization beacons). Subsequent validation of the installed elements.

Preparation of the measure

Step 1: Preliminary assessment

Identify the need for traffic light prioritization and establish the goals of the public procurement process.

Key activities:

- Analyse the characterization of the current state of Blasco Ibáñez Avenue (planned in Val_01) to understand the existing traffic conditions and challenges.
- Define the goals and objectives of traffic light prioritization (for example: reducing delays, improving public transport efficiency, among others).

Step 2: Study of the section

Section 2 of Avenida Blasco Ibáñez (between Av. Aragón – C. Doctor Manuel Candela and C. Ramón Llull) has merging lanes from the streets that cross the avenue and numerous intersections with reduced distance between them. In addition, there are sections where the available road width is also quite reduced. For this reason, the segregation of the bus line will be materialized through road markings and separating elements, without altering the current distribution of lanes (Val_01), and traffic light priority elements for public transport (traffic light prioritization beacons).

The intervention on this section will include the relocation of bus stops, the adaptation of vertical and horizontal signage and the replacement of any services that may be affected, street furniture or tree pruning, as appropriate, as introduced in the Val_01 measure sheet.

Step 3: Validation of the optimal solution

Validation process with EMT (PTO) of the preliminary location and typology of **traffic light priority elements for public transport (traffic light prioritization beacons)** solution to be adopted.

Establishing clear criteria to ensure that the solution is effective and meets the objectives when validating traffic light priority elements for public transport is essential. For that reason the following criteria should be considered during the validation of the optimal solution with PTO (EMT):

- **EMT:** effectiveness in reducing travel times: measure the reduction in travel times for public transport vehicles compared to baseline conditions.
- **Valencia City Hall:** system reliability and functionality: ensure that the prioritization system operates reliably and consistently under various conditions.
- **EMT - Valencia City Hall:** integration with existing infrastructure: verify that the prioritization system integrates smoothly with existing traffic management and public transport infrastructure.

Step 4: Subcontracting process for the supply and installation of traffic light priority elements for public transport (traffic light prioritization beacons)

This process requires, on the one hand, defining the technical and administrative specifications and, on the other, the processing of the contract for the supply and placement of traffic light priority elements for public transport (traffic light prioritization beacons) -Step initiated and in process-.

The subcontracting process for the supply and placement of traffic light priority elements for public transport (traffic light prioritization beacons) intended to improve the efficiency and safety of public bus transport services on Avda. Blasco Ibáñez for reducing travel times through the implementation of dedicated bus lanes.

Technical conditions:

- **Traffic light priority elements** for public transport (traffic light prioritization beacons): priority traffic elements will guide decision-making, resource allocation and progress assessment.

Milestones of the public procurement process:

- **Preparation of the public procurement process:** this subphase includes determining the object, establishing the estimated budget and preparing the contract documentation (conditions, requirements and budget justification).
- **Request for offers, awarding of the public contract and contract formalization** *(part of WP6).*
- **Execution of the contract** *(part of WP6):* this subphase includes infrastructure completion, system testing and system integration.
- Once the **traffic light priority elements for public transport** have been installed, Valencia City Hall and EMT will carry out a post-implementation review (pilot testing).
- **Reception of the work carried out and validation of results** *(part of WP6).*
- The installation of **traffic light priority elements for public transport (traffic light prioritization beacons)** and the consecutive validation and acceptance of the results of the pilot tests is expected to start in the fourth quarter of 2024.

Challenges & Mitigations

The criteria of **Step 3** provide a situation point for validating traffic light prioritization elements ensuring that the system effectively enhances public transport while balancing the needs of all road users. The subcontracting process **(Step 4)** will ensure that the chosen traffic light prioritization solution validated is effective, reliable, and ready for broader implementation. All in all, within the process of implementing and validating **traffic light priority elements for public transport (traffic light prioritization beacons),** the following challenges and mitigations can be highlighted.

Challenges:

- **Traffic congestion:** implementing traffic signal priority (TSP) for BRT buses involves adjusting traffic lights to give BRT buses priority, reducing delays and improving overall traffic flow; this implementation may cause an exceed on roadway capacity.

Mitigations:

- **Install sensors (traffic light prioritization beacons)** that detect approaching BRT buses and adjust traffic signals accordingly to minimize the impact on general traffic while ensuring BRT efficiency.

Next steps towards implementation

The next steps necessary to proceed with the implementation of the measure (already taking place under WP6) are briefly described below.

Study of offers and award of contracts

- Evaluation of technical proposals (tender process).
- Awarding of the public contract and contract formalization.
- Execution of the contract.
- Reception of the work carried out and validation of results.

Installation of traffic light priority elements for public transport (traffic light prioritization beacons)

- Execution of technical tasks: technical analysis and proposal of technical work.
- Validation and acceptance of the technical supply and facilities.