

APPENDIX D: SCIENCE CITY URBAN INFRASTRUCTURE - PHASE II SCOPE OF WORK

Implementation of the Science City Urban Infrastructure (SCUI Phase II) improvements will include all site preparation and infrastructure components required to support short and long-term Life Sciences and private development initiatives, based upon the approved Science City Master Plan. Initial efforts will concentrate on roadway infrastructure that will provide critical connectivity with *Centro Médico*, the Comprehensive Cancer Center and other key adjacent public arteries and will encompass the primary public spaces in Science City. All primary roads plans included in the project are expected to be built by the Puerto Rico Infrastructure Financing Agency (PRIFA), assuming TIGER funds, while secondary roads will be required from developers and developments as work progresses within Science City.

The site preparation and infrastructure components include, among others, the following tasks:

- Roadway network
- One-Span Bridge
- Open Space & Landscape
- Utility infrastructure (power, water, sanitary, telecom)
- Sustainable and environment-friendly storm water management

All Right of Way (ROW) required for the implementation of these improvements (see Summary Table below) are owned by the Trust (the former Oso Blanco property) or the PR Highway and Transportation Authority (PR-18 and the ROW segment west of PR-18 needed for the bridge and boulevard extension to meet Phase I improvements).

Science City Urban Infrastructure-Phase II Project ROW Components		
1.	Science City Blvd.	
	Roadway Segment Length/ROW Width (Segment West of Laboratory St.)	229.5m / 26.83m
	Roadway Segment Length/ROW Width (Segment East of Laboratory St.)	565m / 30.16m
3.	Bridge Replacement PR-18	
	Single Span Length	56.00 m
	Roadway Width	13.40 m
2.	Laboratory St.	
	Roadway Segment Length/ROW Width (Segment North of Science City Blvd.)	290m / 27.94m
	Roadway Segment Length/ROW Width (Segment South of Science City Blvd.)	491.5m / 23.45m

The project consists primarily of the construction of a 0.50 mile, four traffic lane multimodal roadway known as "Science City Boulevard" from the Comprehensive Cancer Center, west of highway PR-18, to its intersection with highway PR-21, where the main entrance to the former penitentiary complex was located. In addition, the scope of work includes the construction of retention walls, utilities infrastructure, drainage, traffic signal system, lighting, pavement marking and traffic signing. The roadway section, west of the "Laboratory Road", contains two 3.35m lanes of traffic in each direction, two 3.00m sidewalks, a 2.40m raised median separator and a 3.00m dedicated bike lane. At east of the "Laboratory Road", the roadway section contains two 3.35m lanes of traffic in each direction, two 3.00m sidewalks, a 2.40m raised median separator and two 3.00m dedicated bike lanes.

The project also includes a 56.0m single-span bridge overpass that carries Science City Boulevard over highway PR-18. The bridge width is 29.87m and is set to match the approach roadway section. It contains two lanes of traffic in each direction, two sidewalks, a raised median separator, a dedicated bike lane, safety fences and architectural features. The superstructure consists of ASTM A709 grades 70 and 50 welded plate girders with a composite cast-in-place reinforced concrete deck. The abutments are founded on spread footings. This new bridge will provide a clean span over PR-18, eliminating a major safety hazard caused by a center pier of the existing obsolete bridge.

In addition, the project also includes the construction of a 0.43-mile roadway known as "Laboratory Road", running generally north to south. This road will have two different segments. The first segment, from Science City Boulevard southward to De Diego Avenue, contains three 3.35m lanes of traffic, sidewalks, parallel parking and two 3.00m dedicated bike lanes. The north roadway segment of the "Laboratory Road" contains two 3.35m lanes of traffic in each direction, sidewalks, parallel parking and two 3.00m dedicated bike lanes.

The landscape components provide shade and protection to the pedestrian within the Science City, the vegetal character and spatial dimension of each of the proposed streetscapes will provide a clear way-finding system for the development. The proposed landscape environment creates distinct physically circuits, utilizing a variety of native vegetal species, generous urban furnishings, and distinct lighting. This urban armature will be a unique architectural element that provides a physical identity as well as shade that will structure the long-term implementation of the Science City development project from its onset through completion.

The foundation of a strong ecological and sustainable development is the responsible and efficient use of water. The proposed design strategies for the drainage component addresses this challenge. Development at the scale of the Science City will invariably affect the surrounding water table by covering permeable ground surfaces with impermeable building surfaces. In a typical development, this would have the effect of channeling the abundant tropical rains into an already overburdened storm sewer system. As an alternative, we propose to collect and channel this rain water and run off into a storm water system that filters the collected water before either: (1) directing it into a bladder that allows it to percolate back into the water table or (2) directing it into a collection basin where it could be reused by future adjacent building systems for irrigation, grey water and/or cooling.

A strong hydrologic strategy will also prevent any adverse impact on the Buena Vista creek along the *Oso Blanco* site's eastern perimeter. A primary example of the second operation noted above would be the retention basin in the Science City's central park, as proposed in the Master Plan. Here, water from much of the western half of the site would be collected, filtered and reused for cooling in the adjacent laboratory parcels and for irrigation of the central open space. This would in effect turn the entire central park into a performative infrastructure that not only provides a public amenity for the broader development, but also serves to directly support the science and research mandate of the Puerto Rico Science Technology and Research Trust.

The diverse design strategies used for the Urban Landscape and Infrastructural components for the SCUI Phase II are further summarized in Appendix V.

