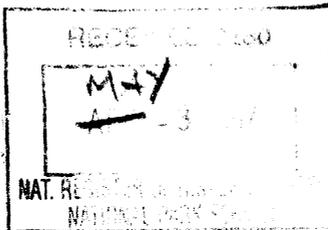


NPS Form 10-900  
(Rev. Aug. 2002)  
United States Department of the Interior  
National Park Service



OMB No. 1024-0018

585

**NATIONAL REGISTER OF HISTORIC PLACES  
REGISTRATION FORM**

**1. Name of Property**

**historic name:** Acueducto de San Juan [*San Juan Waterworks*]

**other names/site number:** Río Piedras Filtration Plant  
Antiguo Acueducto del Río Piedras  
Primer Acueducto de San Juan

**2. Location**

**street & number:** Flamboyán Street **not for publication** N/A  
**city or town:** San Juan **vicinity:** University of Puerto Rico's Botanical Garden and Agricultural Station, Río Piedras  
**state:** Puerto Rico **code:** PR **county:** San Juan **code:** 127  
**zip code:** 00924

**3. State/Federal Agency Certification**

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this  nomination \_\_\_ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property  meets \_\_\_ does not meet the National Register Criteria. I recommend that this property be considered significant \_\_\_ nationally  statewide  locally. (\_\_\_ See continuation sheet for additional comments.)

Signature of certifying official  
Aida Belén Rivera Ruiz

4 May 2007

Date

Puerto Rico State Historic Preservation Office

In my opinion, the property  meets \_\_\_ does not meet the National Register criteria. (\_\_\_ See continuation sheet for additional comments.)

Signature of commenting official/Title

Date

Puerto Rico State Historic Preservation Office

**4. National Park Service Certification**

I, hereby certify that this property is:

- entered in the National Register  
    \_\_\_ See continuation sheet.
- determined eligible for the  
    National Register  
    \_\_\_ See continuation sheet.
- determined not eligible for the  
    National Register
- removed from the National Register

\_\_\_ other (explain):

*for Daniel J. Vitiana 6/21/07*  
Signature of Keeper      Date of Action

**5. Classification**

**Ownership of Property:**

- private
- public-local
- public-State
- public-Federal

**Category of Property:**

- building(s)
- district
- site
- structure
- object

**Number of Resources within Property:**

Contributing	Noncontributing
8	- buildings
1	- sites
5	- structures
-	- objects
14	- Total

**Number of contributing resources previously listed in the National Register:**

1

**Name of related multiple property listing:**

N/A

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES  
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY Acueducto de San Juan  
NAME:

MULTIPLE  
NAME:

STATE & COUNTY: PUERTO RICO, San Juan

DATE RECEIVED: 5/08/07 DATE OF PENDING LIST: 5/29/07  
DATE OF 16TH DAY: 6/13/07 DATE OF 45TH DAY: 6/21/07  
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 07000585

REASONS FOR REVIEW:

APPEAL: N DATA PROBLEM: N LANDSCAPE: N LESS THAN 50 YEARS: Y  
OTHER: N PDIL: N PERIOD: N PROGRAM UNAPPROVED: N  
REQUEST: Y SAMPLE: N SLR DRAFT: N NATIONAL: N

COMMENT WAIVER: N

     ACCEPT      RETURN      REJECT                      DATE

ABSTRACT/SUMMARY COMMENTS:

The Acueducto de San Juan is significant statewide under Criterion A for its historical role as the primary waterworks for the city of San Juan and under Criterion C for its engineering design. The aqueduct is the best surviving example of a late nineteenth-century waterworks in Puerto Rico. It was first proposed in the 1840s, but construction did not begin until 1892. It supplied water to the city until 1980. The property includes a remarkable number of surviving resources, including a weir, filtering tanks, and a pumping house. Today, the Acueducto de San Juan reflects the social and engineering history of San Juan and retains integrity to its period of significance.

RECOM./CRITERIA Accept A & C

REVIEWER Daniel Vician

DISCIPLINE Historian

TELEPHONE (202) 354-2252

DATE 6/21/07

DOCUMENTATION see attached comments Y/N see attached SLR (Y)N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.

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**6. Function or Use**

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**Historic Functions** (Enter categories from instructions)

Cat:	GOVERNMENT	Sub:	public works
	INDUSTRY		waterworks
	LANDSCAPE		natural feature

**Current Functions** (Enter categories from instructions)

Cat:	VACANT/NOT IN USE	Sub:	
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**7. Description**

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**Architectural Classification** (Enter categories from instructions)

COLONIAL / Spanish Colonial  
MODERN MOVEMENT / International Style  
LATE 19<sup>TH</sup> AND EARLY 20<sup>TH</sup> CENTURY AMERICAN MOVEMENTS/Bungalow  
LATE 19<sup>TH</sup> AND EARLY 20<sup>TH</sup> CENTURY REVIVALS / Classical  
MODERN MOVEMENT / Ranch Style

**Materials** (Enter categories from instructions)

**foundation:** brick; concrete  
**roof:** concrete; corrugated metal  
**walls:** concrete; brick and sandstone masonry  
**other:** bluestone

**Narrative Description**

X See continuation sheet.

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**8. Statement of Significance**

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**Applicable National Register Criteria** (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- X **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- **B** Property is associated with the lives of persons significant in our past.
- X **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- **D** Property has yielded, or is likely to yield information important in prehistory or history.

**Criteria Considerations** (Mark "X" in all the boxes that apply.)

- **A** owned by a religious institution or used for religious purposes.
- **B** removed from its original location.
- **C** a birthplace or a grave.
- **D** a cemetery.
- **E** a reconstructed building, object, or structure.
- **F** a commemorative property.
- **G** less than 50 years of age or achieved significance within the past 50 years.

**Areas of Significance:**

Engineering  
Architecture  
Conservation  
Health  
Social History

**Period of Significance:**

1846 - 1892  
1892 - 1899  
1917 - 1980

**Significant Dates:**

1846 - *C. Blume*  
1848 - *J.M. Lombera*  
1874 - *T. Lubelza*  
1878 - *E. Gadea*  
1887 - *F. Alameda*  
1892 - *L.A. Scott/Grover/H.T.Granger*  
1899 - *opened operations, A. Guerra*  
1914 - *F. Montilla*  
1917-18 - *Roberts Filter Mfg. Co.*  
1923-33 - *C. del Valle Zeno*  
1980 - *closed operations, Puerto Rico's Water Resources Authority*

**Significant Person:**

N/A

**Cultural Affiliation:**

N/A

**Architect/Builder:**

*Blume, Carlos*  
*Lombera, Juan Manuel*  
*Gadea, Enrique*  
*Alameda, Fernando*  
*Scott, Luke A.*  
*Granger, Henry Thomas*  
*Guerra, Arturo*  
*Montilla, Fernando*  
*Del Valle Zeno, Carlos*

**Narrative Statement of Significance**

See continuation sheet.

=====  
**X** See continuation sheet.

**Previous documentation on file (NPS)**

- preliminary determination of individual listing (36 CFR 67) has been requested.
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # \_\_\_\_\_
- recorded by Historic American Engineering Record # \_\_\_\_\_

**Primary Location of Additional Data**

- State Historic Preservation Office
- Other State agency
- Federal agency
- X** Local government
- X** University
- X** Other

**Name of repository:**

The Conservation Trust of Puerto Rico [fideicomiso@fideicomiso.org]  
Archivo General de Puerto Rico [Puerto Rico's National Archives]  
Archivo de Arquitectura y Construcción de la Universidad de Puerto Rico [University of Puerto Rico's Architecture and Construction Archive]

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**10. Geographical Data**  
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**Acreage of Property:** 24.18 acres

[Río Piedras' meander sector = 9.44 acres; Loma de Prim's sector = 1.11 acres; Río Piedras' river basin = 14.63 acres]

**UTM References:**

Zone	Point	Northing	Easting
19	1	2036346.25	811072.25
	2	2036373.72	811143.01
	3	2036040.71	811036.25
	4	2035812.07	810839.10
	5	2035574.98	810844.16
	6	2035494.96	810680.45
	7	2035496.71	810729.60
	8	2035358.57	810832.90
	9	2035340.94	810795.75
	10	2035178.71	810797.60
	11	2035756.42	810591.20
	12	2035955.92	810872.49
	13	2036153.14	810927.53
	14	2036159.58	811029.90
	15	2036152.73	811533.03

**Verbal Boundary Description:**

**X** See continuation sheet.

**Boundary Justification:**

**X** See continuation sheet.

=====  
**11. Form Prepared By:**  
=====

**name/title:** Aníbal Sepúlveda Rivera, PhD; Arch. Alberto del Toro Agrelot

**organization:** The Conservation Trust of Puerto Rico **date:** May, 2006

**street & number:** Tetuán 155 **telephone:** 787-722-5834

**city or town:** Old San Juan **state:** Puerto Rico **zip code:** 00901

=====  
**Additional Documentation**  
=====

**Maps**

See continuation sheet.

**Photographs**

See continuation sheet.

=====  
**Property Owner**  
=====

**Meander's Site:**

**name:** The Conservation Trust of Puerto Rico [fideicomiso@fideicomiso.org]

**street & number:** 155 Tetuán St. **telephone:** 787-722-5834

**city or town:** Old San Juan **state:** Puerto Rico **zip code:** 00901

**name:** Office of the President, University of Puerto Rico's Central Administration

**street & number:** 1187 Flamboyán St., Botanical Garden South **telephone:** 787-759-6061, 787-7640475, 787-765-5955

**city or town:** San Juan **state:** Puerto Rico **zip code:** 00926-1117

**Loma de Prim's Site:**

**name:** Puerto Rico Water Resources Authority [AAA]

**street & number:** José C. Barbosa Ave. **telephone:** 787-620-2482

**city or town:** San Juan **state:** Puerto Rico **zip code:** 00923  
=====

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**NATIONAL REGISTER OF HISTORIC PLACES  
CONTINUATION SHEET**

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Acueducto de San Juan  
San Juan, Puerto Rico

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**NARRATIVE DESCRIPTION**

The Acueducto de San Juan is a discontinuous historic district containing a waterworks facility of historic and engineering significance located on the North coast of the island of Puerto Rico in the Municipality of San Juan, 10.4 km. southeast of Old San Juan, and 1.18 km. from the town of Río Piedras. The access road of the district branches south of State Road PR-1 and PR-8839. It was designed and built between the late 19<sup>th</sup> and early 20<sup>th</sup> Century. The nominated historic district includes an area of approximately 24.18 acres divided in two parcels. The main parcel consists of the intake, filtering and pumping facilities located at a meander of the Río Piedras River, 10.4 kilometers [6.46 miles] from the nearly 500 years old walled city of San Juan. The other is the Loma de Prim [Prim's Hill] water reservoir located 830 meters northeast of the meander at the highest elevation of Barrio Venezuela. Planned since 1846, the waterworks began serving drinking water to the city in 1899.

The larger parcel includes a significant number of original buildings, and structures grouped together within a 23.07 acres area at the entrance of the University of Puerto Rico's Botanical Garden and a short walk from Cupey Station, one of seventeen Tren Urbano metro stations of the city's newly inaugurated rapid transit system. This sector includes the following: a segment of 1.94 kilometers of the Río Piedras River, and 50 meters of the Guaracanal stream, the aqueduct's weir, the water distribution gatehouse or mixing chamber; the steam powered pumping house and its chimney; the engineer's and caretakers residence; the chemical and mechanical filter's building; the director's residence and a two acre site containing six coagulating and settling basins. It also has the original service access road into the historic district, an original access road gate, and the historic Río Piedras Bridge, built in 1853. The second parcel, on a nearby hill northeast of the meander, contains the filtered water reservoirs. The hill was known as the *Loma de Prim* [Prim's Hill].

The proposed historic district consists of 15 resources, 14 contributing, and 1 noncontributing. The part of the district is within the University of Puerto Rico's Botanical Garden and Agricultural Station, and is also part of the land designated as *Corredor Ecológico de San Juan* [San Juan Ecological Corridor], approximately 1,000 acres of urban natural government protected reserve.

The location for the aqueduct was chosen in 1887 after careful examinations of previous alternatives. The decision was taken considering three main issues: cost, capacity of the intake, and the quality of the water. First, it represented the shortest distance possible from the intake to the city, thus being the less expensive alternative [the previous alternative was much farther away to the East at the Loiza River]. It was also very near a hill [Loma de Prim] where the decanted water could be easily pumped up, and then fed into the city by gravity with enough pressure to reach the old walled city. Second, the site was just downstream of the confluence of Guaracanal Creek with the Río Piedras River, ensuring the required volume. Third, the quality of the water was tested and proved to be safe and potable.

The waterworks was planned and constructed in different stages during the second half of the 19<sup>th</sup> century and early 20<sup>th</sup> century. Three major periods in the history of the system have been identified. The first corresponds to the extended planning, budgeting and design, from 1846 to 1892. The second is related to the building of most of its components and corresponds to the steam power era. This period runs from the beginning of its construction in 1892 to the year of its official inauguration in 1899. The third period runs from 1917, when a complete set of mechanical filters was installed and the plant changed from steam to electric power. This last period ends in 1980 when the plant was partially shut down.

Ownership and management was transferred from the municipality of San Juan to the State owned water company, Autoridad de Acueductos y Acantarillados [AAA], in the 1940s. At that time the State took over most of the old municipal waterworks thus centralizing all water facilities on the Island. In 2005, the AAA donated the meander plot and buildings to the University

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Acueducto de San Juan  
San Juan, Puerto Rico

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of Puerto Rico. In 2006, the University of Puerto Rico transferred, in usufruct, the property to the Conservation Trust of Puerto Rico.

Having always been public property adjoining the University of Puerto Rico [UPR] Botanical Garden, the Agricultural Experimental Station, and a range of low forest hills, the area was spared the massive suburban growth of metropolitan San Juan. This complex is now part of a bucolic island of greenery that provides an oasis of historic and natural importance within the surrounding suburbanized areas. Its' historically important facilities will be restored and reused by the Conservation Trust of Puerto Rico as part of an ambitious learning center in association with the University of Puerto Rico. It will also be the main pedestrian entrance to the Botanical Garden from the Cupey Station of the mass transit system.

The overall shape of the site is defined by the river's meander immediately downstream from the weir. The layout of the settling basins recalls the Fairmount Waterworks in Philadelphia, visited by local municipal authorities in 1848.

The nomination of the man-made structures is inseparable from the river, which made them possible. This 1.725 km long segment of the Río Piedras River has kept its' natural course and atmosphere, without significant alterations, which adds natural and aesthetic value to the historic district. The district nomination includes the segment between the Río Piedras Bridge No. 3, on Route PR-1 and PR-8839, which is included since 1995, in the National Register of Historic Places [*Historic Bridges of Puerto Rico*] and the bridge on PR-176 to the south.

### **Flora and Fauna**

The original landscape surrounding the waterworks' meander was dominated by open fields of sugarcane – *caña de azúcar* [*Saccharum officinarum*] since it formed part of Hacienda San José, a 19<sup>th</sup> Century sugar mill. Coconut palms – *palma de coco* [*Cocos nucifera*] propagated along the river's bank. Today, all the surrounding fields have been largely urbanized. The river's banks were planted with common bamboo trees – *bambua* [*Bambusa vulgaris*] introduced on the island in the 1940s from tropical Asia to control river's banks erosion. Also present are local river grasses like giant reed – *guajana* [*Arundo donax*], uva grass - *caña brava* [*Gynerium sagittatum*], river grass – *yerba de río* [*Echinochloa polystachia*], and umbrella grass – *papiro enano* [*Cyperus alternifolius*]. After the water basins were filled with soil in the 1980s, trees, grasses, and small shrubs have grown causing limited damage to the basin's walls, the main trees identified are: the African tulip tree – *tulipán africano* [*Spathodea campanulata*], Thibet tree – *acasia* [*Albizia procera*] and Angelin tree – *moca* [*Andira inermis*]. The main grasses are Guinea grass – *guinea* [*Panicum maximum*], and Elephant grass – *melquer* [*Pennisetum purpureum*]. Walls of some of the historic resources like the old chimney are covered by climbing philodendron vines - *bejuco de agua* [*Philodendron scandens*]. At present, local arborists are working towards the removal of all the trees within the basins perimeter and close to historic properties that may, or are affecting the structural integrity of the historic resources without causing damages to them.

The fauna inside the water basins were largely river shrimp – *camarón de río* [*Macrobrachium carcinus*], river crab - *buruquena* [*Epilobocera sinuatifrons*], fresh water eel – *anguila* [*Anguila rostrain*], and Puerto Rican slider - *jicotea* [*Trachemys s. stejnegeri*]. Aqueduct's employees use to fish them. At present the meander is populated by green iguanas – *gallina de palo* [*Iguana iguana*], introduced on the island as pets from Central America in the 1990s. Among the birds identified at the site are: green heron - *martinete* [*Butorides virescens*], Puerto Rican honeycreeper – *reinita* [*Coereba flaveola*], and the common heron - *yaboa común* [*Nyctanasa violacea*].

### **The Meander Facilities:**

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San Juan, Puerto Rico

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Reservoir Weir at the Río Piedras River [see Photos #50-65]

The waterworks weir is discretely sited on one of the most pristine sections of Río Piedras. It is located 38 meters away from the old mixing chamber and the settling basins, and 136 meters from the pumping house. The river's weir was designed by local engineer Fernando Alameda in 1887. However, its original plans were revised by two British civil engineers, J.M. Grover and Henry Thomas Granger in 1891-1892. The weir was finally built in 1894. It is a polygonal structure 17.5 meters long, 3.0 meters high, and 2.6 meters wide. The original structure had a 6.75 meters semicircular segment located at the concave section to channel the overflow. The foundations are made of hydraulic lime mortar [*hormigón hidráulico*]. Its' main structure is made of different sizes of carved blue-limestone, assembled at special angles to provide strength and durability. The body of the weir has two vaulted apertures designed for the collection of the overflow from the river. The embankments were made of compressed stones and mortar, and covered by limestone blocks. At an unknown date, two hydraulic cement slabs were installed on the top of the structure, probably to enlarge the retaining capacity of the weir and increase the capacity of the water basins. In time, however, this alteration caused the deterioration of its embankments. The original design did not consider the additional burden. These sections are now severely eroded and in urgent need of restoration. A system of steel pipes conducted raw river water from the weir to the mixing chamber and valve house and from there to the settling basins. The original system was cleverly designed to use only gravity forces.

The Mixing Chamber and Valve House [see Photos #42-49]

The original building was built between 1894 and 1896. It was designed by municipal engineer Arturo Guerra, after the original scheme by Fernando Alameda in 1887. The original structure was built in the Spanish Colonial style characteristic of most public and private buildings on the island during the 19<sup>th</sup> and early 20<sup>th</sup> Century. It was rectangular in shape, 4.50 meters wide by 11.50 meters long, and has two levels; the lower level housed the distribution pit; the higher one was used for administrative purposes. Its main function was as a gatehouse to distribute the raw water from the weir to the settling basins. The building materials include: hydraulic lime mortar, stones and masonry. The original flat roof was built using traditional hard wood beams and bricks, but was later replaced by a concrete slab. The original pit chamber was altered in 1923 when the old masonry building was topped by a reinforced concrete, two story, and flat roof structure. This new addition was also in Spanish Colonial style and was designed by a local engineer Rafael Del Valle Zeno. The second level housed an administrative facility, but its' basement kept the original use as a valve house for flood control of the settling basins. One can still clearly differentiate between the original building and the later concrete addition.

Settling Basins [see Photos #82-87]

Six settling basins were designed and constructed to fit neatly within the contours of the river meander. Following the natural flow, a 30 inches outlet from the weir channeled the water to the valve house and from there to the settling basins. The basins were design by Arturo Guerra in 1895-1896, who modified the original plan of only one rectangular basin designed by Fernando Alameda in 1887. Altogether they formed a semicircular facility that provides an ample open space of about 3.1 acres facing the historic buildings. The masonry basins were completed in 1898. The raw water from the river was kept in the settling basins for 24 hours before it was pumped to the nearby hill reservoir at the Loma de Prim. The six settling basins are of different sizes and depths. They ranged from a depth of 9 feet 4 inches to 14 feet 6 inches. The first four tanks were designed to separate sediment and allow cleaner water to enter tank number five, the *coagulating tank*, where alum was added. From there, the clean water was suctioned to the pumping station. In 1989, all six settling basins were filled with soil. This alteration, although significant, is reversible and may have even preserved the basins from further deterioration.

Pumping House [see Photos #22-32]

The pumping house was designed in 1892, by Henry Thomas Granger, consultant of the London based company that was

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awarded the construction contract. The rectangular [112 x 48.5 feet] one-story side-gabled Spanish Colonial building was subdivided in three areas: the coal store [interior area 25.5 x 45 feet], the boiler house [30 x 45 feet], and the engine house [50' x 45']. Some of the walls are 1'9'' thick and others are 1'6'' thick. The building is the most outstanding of all for its dimensions, beauty and engineering workmanship. The building was completed in 1896. Attached to the boiler house is an octagonal brick masonry chimney, 80 feet high and 4 feet in diameter. The superior portions of the chimney are decorated with a neoclassical cornice. The walls of the engine and boiler house area are 22 feet high and support a roof structure made of steel trusses and corrugated zinc. The coal storage area walls are 15 feet high and also have a roof structure of thin steel trusses and corrugated iron roof. All the walls are made of limestone and brick masonry. An underground 10 feet round well connected the last of the settling basin to the vapor pump engines. The original steam engines at the Mechanical Filters' building were replaced by electric motor pumps in 1917. None of the two original steam engine pumps have survived, although further archeological research may reveal some of their remnants on the site. This building and its chimney constitute a visual landmark and can be seen from the mass transit's Cupey Station some 430 meters away. Although in need of attention, it remains in relatively good shape and can be easily restored.

Engineers and Caretakers' Residence [see Photos #66-72]

The rectangular 25.40 x 8.10 meters building was designed in 1887 by Fernando Alameda and was built between 1892 and 1894. It was part of the main core of the original waterworks buildings. The flat roof one story Spanish Colonial building had the foundations made of lime mortar and the walls made of limestone and brick masonry. This property is located on the main north-south axis together with the rest of the historic buildings of the complex and its main façade faces east. In 1923 concrete was used to replace the original hardwood beams and bricks roof. Its original function was to house the caretakers of the waterworks. For this reason, the building was subdivided into 11 very modest living quarters and three vestibules. After 1923 the building was altered to accommodate new uses. First as a warehouse, and later from 1923 to the 1980s it housed a water quality laboratory. Since the 1940s, when the municipal aqueduct became a State-run agency, (AAA) it housed the central lab serving the whole island. In the 1980s, the laboratory was transferred to another site and the building was abandoned. Currently, some alterations are still visible like the exhaust conduits.

Chemical and Mechanical Filter's House [see Photos #33-41]

The mechanical filter house was designed and built in 1917-1918, by Darby, a Pennsylvania based company, Roberts Filter Mfg. Company. Mechanical filters were added to the facilities when the old steam pumps were replaced by electrical water pumps. Originally, a small wooden shed housed four 8 feet diameter by 25 feet long cylindrical filters that were acquired from Roberts Filter. With the onset of World War I and the creation of a nearby military camp of 12,000 recruits, eight new filters were added, increasing the filtering capacity of the aqueduct. The original building was re-designed with the assistance of municipal engineers Fernando Montilla and Miguel Ferrer Otero in accordance to the specifications of Roberts Filter. In 1923, the original wooden shed building was replaced by a one story flat roofed concrete international style building designed by Carlos del Valle Zeno. This concrete industrial building, which measure 130''X 24'', is still in place and structurally sound, although the riveted metal tanks require restoration. The front elevation shows one main entrance and 12 vaulted windows, each corresponding to the 12 mechanical filters. Metal and glass windows cover the openings. The rear elevation shows the open cubicles supported by concrete columns. At a later unspecified date, two small contiguous sections were added to accommodate the lime and alum tanks. Currently, nine of the original 12 filters remain in the building.

Director's Residence, Maid's House and Garage [see Photos #15-21]

This concrete two story flat-roofed building was also designed by Carlos del Valle Zeno in the 1930's. It was used as the official residence for the director of the State-run water company, the Puerto Rico Water Authority (AAA). It is a Bungalow

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style building, fashionable at that time. On the first level, an open porch shows stone pilasters that were obviously intended to match the previous style of the existing buildings. The second floor shows sober Art Deco features in use at that time. The floor is of local geometric patterns hydraulic floor tiles. A small ancillary building, built in a modest Art Deco style used to be the maids' quarters [see Photos # 15-21]. The building was converted into administrative offices in the 1960s.

Service and Access Road and Gate [see Photos #7, 80-81]

This service road, 200 meters long by 4.50 meters wide, runs parallel to the river within the Botanical Gardens of the University of Puerto Rico and is the vehicular access to the meander's facilities. This access to the district was planned and built as the service road in 1892 -1893. The design was suggested by the two English engineers, J.M. Grover and Henry Thomas Granger. The construction was supervised by another English engineer living in San Juan, Lucas A. Scott. This path connected the site to the main road near the historic Río Piedras Bridge on the *Carretera Central* from San Juan to Ponce, State road PR-1. Except for its asphalt, the small service road's character and scale remains almost unaltered. The road is a reminder of the bucolic atmosphere that surrounded, and still surrounds, the district. This path is still the only vehicular access to the site.

Engineer's Office Buildings I and II [see Photos #73-77]

Two engineer's office buildings were built in 1953 to the north of the old engineers' residence. Both buildings are of modern International style, concrete, square and rectangular plans, two stories, with flat concrete roof. No major architectural elements are present and were considered contributing features to the historic district because they reflect the architecture changes at mid 20<sup>th</sup> century, and were both built over 50 years ago.

Employee's Lounge [see Photos #78-79]

Built in late 1970s, modern Ranch style, concrete, rectangular plan, one story, front-gabled concrete roof. This is the only non-contributing resource of the historic district.

Historic Río Piedras Bridge No. 3 [see Photos #4-5]

This historic 21.5 meter-long bridge was listed in the National Register of Historic Places under the **Historic Bridges of Puerto Rico (MPS)** on July 19, 1995. Built in 1853, the three arch limestone and masonry built bridge, is the oldest existing one of the *Carretera Central* [State Road PR-1]. The Colonial style structure is symmetric, with a main center arch (span length 9.1 meters) that is bigger than the two smaller lateral ones. Two triangular shaped pillars divide and articulate the three arches helping to funnel the river flow through the openings. A simple but elegant cornice runs the length of the bridge sides just beneath the parapet.

On January 9, 1999, major flooding in the Río Piedras River caused damages to the bridge when one of its small arches on the eastern side collapsed and the center arch cracked at the center. In response to this event, the Department of Transportation and Public Works, in close cooperation with the Puerto Rico State Historic Preservation Office, initiated studies on the bridge's structural condition and designed a strategy to stabilize and restore this historic bridge. The conservation project was contracted to *Edificadora, SE*, and work started on October 8, 2001. During the course of project, the inner arch was held in place by metal scaffolding set underneath the structure. The eastern arch was reconstructed using new bricks brought from the Dominican Republic. The project was completed by June 14, 2004 at a cost of \$3,072, 903.

Río Piedras River Basin [see Photos #5, 8-14]

The Río Piedras River is an urban river that crosses South-North the San Juan metropolitan area from Las Curias, a man made water reservoir, to the San Juan Bay. It's an important ecological resource to the highly urbanized city. Due to the close relation to the waterworks, a segment 1,725 meters long, between historic Río Piedras Bridge No. 3 and the bridge on State Road # 179, originally the right-of-ways of the San Juan-Caguas railroad, is included in the historic district. The segment of the river, rich in fauna and flora, remains practically un-altered since the establishment of the waterworks. The historic district lies

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in the north corner of the Hatillo Hills, the only surviving urban forest in San Juan, surrounded by the urban fabric of the city. To the Northeast of the historic district is the University of Puerto Rico's Botanical Garden, a World Class facility on tropical flora, University's Agricultural Station and administrative facilities.

**The Loma de Prim Facilities:**

Water Reservoirs [see Photos #88-102]

Located in Barrio Venezuela, West of the town of Río Piedras, on a two acres property with a spectacular view of Metropolitan San Juan, the main water reservoir at the *Loma de Prim* [named after local Governor Juan Prim, 1847-1848], was originally designed by Enrique Gadea in 1878, re-designed subsequently by Fernando Alameda in 1887, and by J. W. Grover in 1891. This last design contemplated an iron roof covering for the reservoir. However the roofing proposal never materialized and Arturo Guerra arranged its final design in 1896. The water basins cover an area of approximately 2,365 square meters. It was built between 1896-1897, in the Colonial style by local private contractor, Roque Paniagua García. A fine description by William Dinwiddie (1899: 187) described this reservoir as follows: *The primary reservoir is situated a hundred and sixty feet above the pumps, and is a work of beauty. The walls are of rough masonry, topped with handsome stone fence. The center of this great basin, holding three million seven hundred thousand gallons, is divided by a median wall, and the valve-house is situated at one side of this division.*

In 1918, two elevated cylindrical steel tanks were added, adjacent to the main reservoir, increasing the gravitational force of the waterworks. The tanks were 66 feet high x 28 feet in diameter with a capacity of 204,200 gallons each. The two tanks were visible from a great distance, and became reference landmarks for the community, known by the local population as *Calderos del Acueducto*. Today the access road to this reservoir is named *Calle del Acueducto*.

**Integrity of the property:**

**Location:** The property consists of two main parcels located at the entrance to the University's botanical garden, the only remaining large forested area in metropolitan San Juan. The first has an area of 9 acres and contains the steam power engine, boiler house with its 80 feet high octagonal chimney, the administration and living quarters, the dam, and the silting and filtration tanks. The second parcel, only a few hundred meters away, contains the filtered water reservoir that was part of the system. The aforementioned forested area is called the *Bosque Urbano* and is protected by Law as a reserve and a future recreational area. Moreover, a two billion dollar public heavy rail transit project, called *Tren Urbano* was inaugurated in 2005 and has a station at walking distance from the property. One aerial photo (taken in May, 2000) of the area speaks of the privileged location of the property. The area has been ignored and utilized for non-vital operations by the water company since the 1980's (see Map #17).

**Design:** No other historical aqueduct remains intact in Puerto Rico. Its design process, described above, has unique characteristics. The influences of other aqueducts (Mexico, Philadelphia, New York, Madrid, and London) makes its' design of special importance to the history of Puerto Rican public works. The buildings have the austere neoclassical style in use in Puerto Rico for most of the 19<sup>th</sup> century. The use of traditional local building materials (stone, masonry, wooden beams, corrugated iron roofing and the novel Portland cement at the time) blends into a five century-old tradition of San Juan. Little is known of the history of technical design in Puerto Rican public works. This site provides unique evidence and will stimulate further research on this subject.

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**Setting:** The combination of historical resources, a traditional urban center, green (and public) open spaces, a river, the university campus, an organized community and a modern mass transit system are prime ingredients of good urbanism. The setting is ideally suited for cultural and recreational uses of both the Botanical Gardens and the Administrative headquarters of the University of Puerto Rico. It is within walking distance of both the Estación Cupey (one of 17 stations of a two billion dollar heavy rail transit system) and the center of 18<sup>th</sup> Century town Río Piedras. Río Piedras houses the main campus of the University of Puerto Rico. Heavy public and private investment is taking place in its urban center following the national trend of the ideas and concepts of “New Urbanism”. With the investment in Tren Urbano, transit oriented development projects are moving ahead. The restoration and recovery of the old aqueduct is essential to provide historical oases and much needed accessible green areas to the town center. This bucolic island of greenery, hemmed in by noisy and congested development is the last breathing space in the area.

**Materials:** The old aqueduct contains a variety of building materials: traditional stone masonry, heavy carved stone, Portland cement, corrugated roofing, cast iron and native hardwoods. They have survived harsh use and neglect over time. The professional restoration will utilize as much of the original material as well as new compatible ones. There is extensive experience in restoration projects on the island, especially in Old San Juan.

**Workmanship:** Many local builders were involved in the process of construction: humble hired labor, foremen, professional engineers and architects of the time. A long list of engineers is known to have been involved in the building process:

1892	Lucas A. Scott
1892	J.W. Grover
1892	Edward Crawford
1896	Arturo Guerra
1917	Fernando Montilla
1917	Miguel Ferrer Otero
1923	Carlos Del Valle

**Feeling:** This is a quality of this complex that cannot be overstated. The location, on a pastoral stretch of the river and the Botanical Gardens, surrounded by congested and noisy suburban developments, brings joy and peace to any visitor, as well as pride in our history. When rescued from neglect and converted into the Visitor Center of the University’s Botanical Gardens, they will recover their status as historical landmarks. A photograph taken ca.1898 by Feliciano Alonso, one of our distinguished photographers, shows that local families used the site for recreation at the turn of the century. The project will restore this former use, this time for visitors from the Island and international tourism. The number of visitors to the Botanical Garden is 20,000 yearly.

**Association:** Any aqueduct brings together so many aspects of community life (international education and commerce, financing, public administration, the history of technology, not to mention public health) that hardly any topic can be excluded. From the local taxes on meat, bread and wine (the citizens’ contribution to its financing) to the construction of temporary rail lines to carry heavy material to the site, this aqueduct provided a lifeline to a city, its suburbs and its harbor for over half a century.

Today, the components of the aqueduct, built between 1892 and 1953 are still in place, but in need of restoration. The original design and historic fabric are in high state of preservation. Although the engines and boilers were removed from the pumping

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house, most of the mechanical components of the water works are present and in high state of preservation. The settling basins were fill with soil in the early 1990s, being more than 14 feet deep, we think that little damage have been caused by the trees that have since grown.

A restoration project is in a planning stage and has the endorsement of academic and local community groups. It's being carried out with the enthusiastic leadership of the President of the University of Puerto Rico, Antonio García Padilla, who is personally involved in the project, in a joint venture with the prestigious non-profit nature organization, The Conservation Trust of Puerto Rico, and its President, Fernando Lloveras San Miguel. In 2004, the Puerto Rico Water Authority (AAA) recognized the historic value of the site and donated a five acres parcel at the meander sector, where the main waterworks buildings and structures are located, to the University of Puerto Rico, which transferred it to the Trust. Currently, efforts are underway to transfer the Loma de Prim facilities to the Trust. Today, a coordinated effort is underway to save the eroded weir south bank and un-earth the settling basins. A Design Team has been designated by the Trust to plan the restoration efforts and design an interpretative center, an urban park and water lab facilities.

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**Narrative Statement of Significance**

Acueducto de San Juan is a historic and natural property that has State and local significance. It is the first aqueduct of the city of San Juan and the best remaining example of a Puerto Rican waterworks dating from the 19<sup>th</sup> and early 20<sup>th</sup> centuries. It's two sites, the building complex, structures, and the landscape associated with the old aqueduct remains as a fine example of the history of Puerto Rican public works. At the State level, under criterion C, the property has achieved importance for its 19<sup>th</sup> century stone weir, the pumping house and its attached chimney, together with other contributing buildings and structures associated with the waterworks. The engineering significance of the entire waterworks is based on its surviving elements. The weir, filtering tanks, pumping house, and surrounding buildings, and their synergy, shows the integration of engineering ingenuity with a natural river environment. The waterworks includes the only surviving example of a stone river weir in Puerto Rico associated with a steam era pumping station. The particularly bucolic forested site, with unique views of the city, bounded by suburban development; its newly created accessibility from the city's public transit system; its association with the University of Puerto Rico's Botanical Garden and the regional ecological corridor of the Río Piedras basin, adds importance to this property.

**Historic significance:**

The drinking water supply for the city of San Juan was always a precarious issue. One of the oldest European cities in the Americas, San Juan was founded in 1519. Today Old San Juan is a world-class historic center and a major tourist destination, visited by millions of people every year. Its' restoration process dates back to the 1950s and is nearly completed, but its' first aqueduct, located nearby, in the metropolitan area, has been sorely neglected. It is now being considered vital to understand the evolution of this Caribbean capital city. The San Juan Waterworks fosters the planning and development of numerous communities in neighborhoods of Río Piedras, Santurce and Puerta de Tierra, along the main distribution line. Among the most significant is the Miramar neighborhood, a local historic district, planned after the availability of running water from the aqueduct.

Planning an aqueduct

**A city with no running water:** For more than three centuries (1519-1847) the local authorities did little to provide a steady water supply to the fortified city. Altogether, the complex process of design, administration, bidding and construction of the first aqueduct of San Juan took almost half a century to complete from 1847 to the turn of the 20<sup>th</sup> century. After extensive research, numerous administrative problems, and various design projects by local and European engineers, the actual process of construction can be dated from 1892 to 1900.

**Chronology of events in brief:** It was not until 1847 that the Municipal and Insular Governments began to plan and conceive a modern aqueduct for the growing city of nearly 13,000 people. The first official request for proposals for the construction of an aqueduct was published in the Boletín Instructivo y Mercantil on April 27, 1847. A year earlier, Queen Isabel II of Spain authorized local taxation of meat, bread and wine to finance the project. The entire process would take into consideration that each one of the designed projects followed a linear development scheme during the last half of the 19<sup>th</sup> Century.

**First Proposal:** On September 1847, Carlos Blume was the first engineer to propose a project. He envisioned an open channel similar to the ones existing in Mexico City and New York. In his proposal, he suggested a research visit to the facilities in New York and Philadelphia as possible models for the project in San Juan. The initiation of the process can thus be linked to technologies and engineering already in place in the Americas. The idea was well acclaimed, and two years later, site visits were made to the facilities in Philadelphia (Fairmont) and New York (Croton Aqueduct).

**Second Proposal:** After his visit to the aqueducts in the United States of America, local engineer, Juan Manuel Lombera,

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designed a complete project on October 1849. He proposed the use of technology and gear being used at West Point. The proposed aqueduct was going to use simple and efficient *water hammer* technology to produce the flow and pressure for the system. The proposed source of water was the Río Piedras River, flowing into the San Juan Bay through the coastal valley. At this time, the intake at the Río Piedras River was fixed. A few months later a commission appointed by the Municipal Government examined Juan Manuel Lombera's project and concluded that it was far too expensive to build, especially considering that many of the private dwellings and public buildings in the city had their own cisterns.

**Third Proposal:** In 1853, Gustavo Stenacher proposed a third project. Although detailed drawings were not prepared, he did recommend the use of the site adjacent to Hacienda Solís, an estate owned by José Solís, a well-known landowner and sugar cane producer of the town of Río Piedras. Stenacher's proposal included various public fountains to be located in the public plazas of the city. This proposal was also well received, but he soon left the Island and no further action took place.

**Fourth Proposal:** Three years later (1856) engineer Baltazar Paniagua, (awarded the Medal of Distinction by the Spanish Monarchy in 1826) complained that too many studies had already been done and no action had been taken. He endorsed Lomberas' project, with some technical modifications, and referred to two major engineering wonders of the time located in Spain: The *Canal de Castilla*, (constructed from the late 18th century to the early years of the 19th century) and the *Canal de Isabell II*, providing drinking water to Madrid. Thus, in addition to the Mexican and United States of America experiences, the local aqueduct inherited the influence of the Spanish homeland.

**Fifth Proposal:** However by 1874, no final decision had been taken concerning this project. Governor Laureano Sanz, *Marquis of San Juan de Puerto Rico*, together with the chief of engineers, Timoteo Lubelza, revived the project. By that time, the population of the city was approaching 22,000. From 1875 to 1879, Engineer Enrique Gadea researched and designed a complex aqueduct of nearly 39 kilometers of pipelines from the central mountains all the way into San Juan. He proposed the intake of fresh water from the Río Grande de Loíza. The capacity was about 50 liters per second. The last section of the proposed alignment intersected the Río Piedras and is almost identical to the final alignment built a few years later (see plan included).

**Sixth Proposal:** Gadea's design was, as usual, well received, but for financial reasons it was not implemented. However, a general consensus was taking shape to use of the Río Piedras, (about 10 kilometers from San Juan) for the intake of the aqueduct. This location is in fact the site of the property being nominated. In 1887, yet another commission was assembled to revise Gadea's project. The engineering challenge of maintaining adequate water pressure was addressed by pumping the water from Río Piedras into a large reservoir to be constructed on a nearby hill called *Loma de Prim* (the actual site of the second part of the property). This system was relatively inexpensive since the pumps would only be needed to move water from the river into the high reservoir. From there, gravity would ensure distribution to San Juan. Engineer Fernando Alameda modified Gadea's project and finally, in 1889, the local authorities approved his version.

Building the aqueduct

Another distinguished engineer named José A. Canals revised Gadea's plan and the process of expropriation of the required land was initiated. Engineer Canals was also a city planner and his firm designed the General Expansion Plan (*Plan de Ensanche*) for Santurce, in 1892. The aqueduct was intended to provide the necessary running water for the urban growth of the city. The request for construction proposals was published in the government newspaper, *Gaceta Oficial*, on June 7, 1890. The land expropriations were announced on the November 13, 1890, edition of the *Gaceta Oficial*. As expected, this brought new tensions among the landowners, especially for Enrique Flores, the owner of the land where the actual complex (weir, engine, boiler and coal store house, filtering tanks, and administration building) was to be built. As soon as Flores learned of the plans, he sold his land to the adjoining proprietor Joaquín Solís. Altogether, eleven properties were to be partially expropriated for the waterworks. From this time on, the greatest challenges shifted to administrative issues, in a city with little capacity to handle

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such a major project. Municipal architect, Patricio Bolomburu, was put in charge of the certification of all the stages. On March 9, 1891 the project was announced in the official newspaper in Madrid to include potential European bidders. The bidding process started in San Juan, but local contractors were apprehensive. Later, Lucas A. Scott presented a design-build and administration package based on the approved project, but revised by J. W. Grover, a hydraulic engineer based in London. Thus another influence was added to the local project. Needless to say, the British were on the leading edge of the hydraulic technology and engineering at the time. On January 13, 1892 Governor José Lasso Pérez and the local authorities approved the project. On July, 1892, a new London based engineer came into place, replacing Mr. Grover, and the official contract was signed between the Municipal Government and Edward Crawford Cory. Engineer Lucas A. Scott was still acting as the local representative of the company. The approved proposal included some changes to the original. One of the most significant was the use of Portland cement. At that time, the use of this building material was rare in San Juan's public works. The package included the plans to build several sections of service roads to transport heavy equipment to the construction sites. The London firm provided the plans for the engine house and boiler building, an 80-foot octagonal chimney, a coal storage warehouse, a building for administrative uses and the workshops. A plan for a workers living quarters was also included. All these structures were actually built and are still in relatively good condition.

In 1917, two clear-water hilltop tanks were built of cast iron to enhance the water pressure to the Old City. These hilltop structures were visible from afar and were a well-known landmark. The local community, now called Barrio Venezuela, named the place *los calderos del acueducto*. Most of the older residents still remember these *calderos* that provided an identity to their community. The old iron tanks were later removed after a hurricane damaged them in 1928. In their place, new concrete reservoirs were built in the 1930s to perform the same function.

Most of the gear and sophisticated equipment for this project was ordered from London, but many others, including pumps and metallic parts, corrugated iron for roofing purposes and many small parts were provided by *Sucesores de Abarca*, a local foundry. This company had acquired extensive experience designing and producing heavy equipment for the sugar industry and in producing parts for metallic bridges built in the late 19<sup>th</sup> century.

Settling and filtration tanks built next to the dam and the steam pump house facilities were designed using ideas of the London consultants and Arturo Guerra, a prestigious local engineer/architect. The plans and the technical specifications for the filtering plant were approved on October 1896. A total of six tanks were built. After nearly a century of use, they were covered with dirt, but are relatively intact and will be recovered.

The building process began on August 3, 1896, under the personal supervision of Arturo Guerra, the municipal architect. The city mayor at the time was Matías Ledesma. Many local contractors were employed to provide sand, stone, and building materials. All the construction workers were local residents. A few other local firms, as well as Municipal Government employees, were in charge of the installation the many kilometers of pipelines. On February 28, 1898 the local contractor, Roque Paniagua finished the construction of the water deposits; however the distribution system was still pending since J.T. Silva and Company, who had the contract to provide the pipes, was unable to import them. The bulk of the building process was completed in only two years, a very brief time considering the local circumstances. In 1898 the imminence of the Spanish-American War created additional pressure to provide water to the Admiral Cervera's squadron, whose arrival was expected shortly. San Juan was under a naval blockade for many months, delaying the arrival of crucial machinery from London. To add to the frustrations, a devastating hurricane flooded the area on August 9, 1899, and the aqueduct did not reach full capacity until 1900. The steam power machinery was in service until 1917 when it was replaced by electric pumps. Six mechanized filters were installed by the San Juan municipal authorities. This, undoubtedly, improved the quality of the water. At that time a new war was evolving in Europe and the United States was about to enter the conflict. The city of San Juan was chosen to locate a military training camp. The municipality promised safe drinking water to the nearly 12,000 new recruits and officials. Local bonds were sold through the Puerto Rico Chamber of Commerce, and the sum of more than \$400,000 was collected to finance

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the project. Municipal engineers, Fernando Montilla and Miguel Ferrer Otero, were commissioned to design the new facilities. Eight additional canister filters were speedily acquired from the *Roberts Filters Manufacturing Company* from Darby, Pennsylvania. The mechanized filters, 12 in all, were able to provide the military camp as well as the local population with adequate drinking water. Nine of these filters are still in place today (see Photo #35). The electrical pumps and filters of 1917 made the steam pumping house and settling tanks obsolete. The former was used as a storage facility and the settling tanks eventually became additional clean water reservoirs.

For most of the first half of the 20<sup>th</sup> century the old aqueduct was in use. With the exploding population, this water supply became insufficient and new water sources were used. Nevertheless, the old Río Piedras River waterworks was still in use until the 1980's.

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**Bibliographic Materials:**

**Primary Sources:**

*Acueducto de San Juan. Municipal Public Works, Series: Aqueduct, Legajo 5, Expedientes 1-181/2. General Archive of Puerto Rico.*

*Acueducto de San Juan. Municipal Public Works, Series: Aqueduct, Legajo 6, Pieza 1, Expedientes 19-23. General Archive of Puerto Rico.*

*Acueducto de San Juan. Municipal Public Works, Series: Aqueduct, Legajo 6, Pieza 2, Expedientes 24-30. General Archive of Puerto Rico.*

*Acueducto de San Juan. Municipal Public Works, Series: Aqueduct, Legajo 104, Expedientes 4-13. General Archive of Puerto Rico.*

*Acueducto de San Juan. Municipal Public Works, Series: Aqueduct, Legajo 104-2, Expediente 9. General Archive of Puerto Rico.*

*Río Piedras Water Works File, 1917-1918. Roberts Filter Manufacturing Company, Darby, Pennsylvania.*

*Colección Carlos del Valle Zeno, Archivo de Arquitectura y Construcción, Universidad de Puerto Rico, Río Piedras.*

**Secondary sources:**

Ayuntamiento de San Juan, "Concurso público para el suministro de tuberías... del Acueducto." Gaceta de Puerto Rico, 11 de abril 1896.

Ayuntamiento de San Juan, "Colocación tuberías en la Ciudad." Gaceta de Puerto Rico, 16 de abril 1898.

Blanco, Enrique Tomás. "Gestiones del Acueducto se iniciaron en el año 1551." El Mundo 8 de julio de 1944.

Cámara de Comercio de Río Piedras. Río Piedras, un boceto histórico, Río Piedras: Cámara de Comercio, 1981.

Dinwiddie, William. Puerto Rico Its Conditions & Possibilities. New York: Harper & Brothers, 1899.

Gaztambide Arrillaga, Carlos. Historia de Río Piedras. Río Piedras: Model Offset Printing, 1985.

Géigel, Fernando J. "Breve reseña histórico-crítica del Acueducto." El Mundo, 25 de noviembre de 1940.

Hostos, Adolfo de. "El progreso material, Abastecimiento de Agua Potable" in Ciudad Murada. La Habana: Rex, 1948.

-----, Tesaurus de Datos Históricas. Río Piedras: Universidad de Puerto Rico, 1990.

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Junta de Planificación de Puerto Rico. Municipio de Río Piedras; memoria suplementaria al mapa de límites del municipio y sus barrios. Santurce: Junta de Planificación de Puerto Rico, 1955.

Montalvo, Andrés Jorge. "El Acueducto de San Juan." El Mundo, 25 de noviembre 1940.

Montilla, Fernando. Informe acerca del acueducto, diciembre 28, 1914., San Juan: Municipio de San Juan, 1915.

Ocasio Meléndez, Marcial E. "El desarrollo urbano de Río Piedras (1868-1898)." MA Thesis, University of Puerto Rico, 1977.

----- . Río Piedras: Notas para su historia. San Juan: Model Offset Printing, 1985.

Picó, Fernando. Vivir en Caimito, Río Piedras: Ediciones Huracán, 1988.

Pumarada, Luís, Osvaldo Rivera, and W. Rodríguez. Inventario histórico de ingeniería e industria de Puerto Rico. Río Piedras: Universidad de Puerto Rico, 1977.

----- . Los puentes históricos de Puerto Rico. San Juan: Autoridad de Carreteras y Transportación de Puerto Rico, 1991.

Sáez, Florencio. Río Piedras: estampas de mí pueblo, 1898-1945. Río Piedras: Editorial Palma Real, 1988.

Sepúlveda Rivera, Aníbal. San Juan, Historia ilustrada de su desarrollo urbano, 1508-1898., San Juan: Carimar, 1989.

-----, Aníbal; Puerto Rico Urbano, Atlas Histórico de la Ciudad Puertorriqueña., San Juan: CARIMAR/ DTOP, 2004.

Todd, Roberto H. "El desarrollo urbano de Santurce" El Mundo, 2 de enero de 1938.

-----."El Acueducto". El Mundo, 4 de septiembre de 1938.

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**Geographical Data:**

**Verbal Boundary Description:**

The *Acueducto de San Juan* Historic District is formed by two separated parcels, the Río Piedras meander, and the Loma de Prim located 830 meters northeast. The nominated historic district has a total area of 24.18 acres. The Río Piedras River meander parcel [9.44 acres] is bound to the North by historic Bridge No. 3, 630 meters Northeast of the pumping house; to the East by the old access road and the University of Puerto Rico's Botanical Garden and Agricultural Station; to the South by the intersection of the Río Piedras River and the bridge on State Road PR-176, 620 meters Northeast of the pumping house; and to the West by the Río Piedras River. This parcel is marked by UTM references numbers: 1 to 14. This parcel is subdivided in three smaller parcels: the Bridge No. 3 and the old access road parcel; the Río Piedras River meander parcel [9.44 acres]; and the South of the old weir river parcel. The Loma de Prim parcel [1.11 acres] is bound on all sides by Barrio Venezuela, a low income community South of Río Piedras downtown. This parcel is mark by UTM reference number: 15.

**Boundary Justification:** [see Maps #4, #5, and #15]

The nominated district includes the two parcels historically associated with the 19<sup>th</sup> Century San Juan waterworks: the Río Piedras River meander parcel with filtration and pumping facilities, the settling basins, the old access road and a segment of the river; and the Loma de Prim parcel with the filtered water storage facilities. Being an essential part of the San Juan waterworks, a segment of the Río Piedras River is included as part of the historic district, including the intersection between the river and the Guara canal which contributed a significant amount of the water volume available to the aqueduct. The segment selected is bounded by two adjacent historically important locations: the old Carretera Central's Río Piedras Bridge No. 3 to the North, built in 1853, and the intersection of the river and the old railroad line bridge from the cities of San Juan to Caguas of the *Porto Rico Railway Light & Power Co.* The railroad bridge was replaced by State Road #176 when the railroad ceased operations in 1952. The context between the two points was and is closely related to the meander facilities of the historic district.

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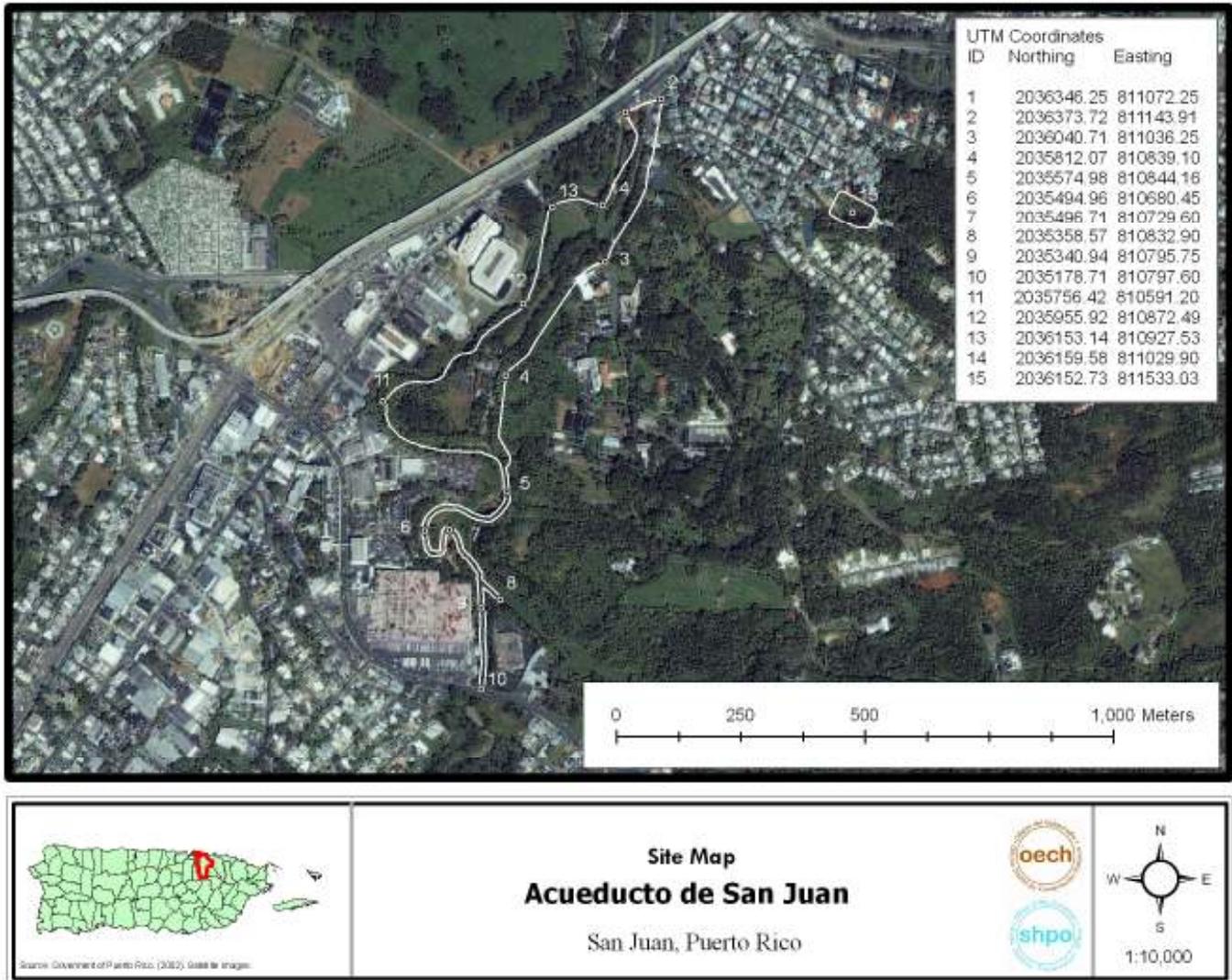


Figure 1 – Site Plan illustrating UTM Coordinates

United States Department of the Interior  
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES  
CONTINUATION SHEET

Section 10 Page 17

Acueducto de San Juan  
San Juan, Puerto Rico

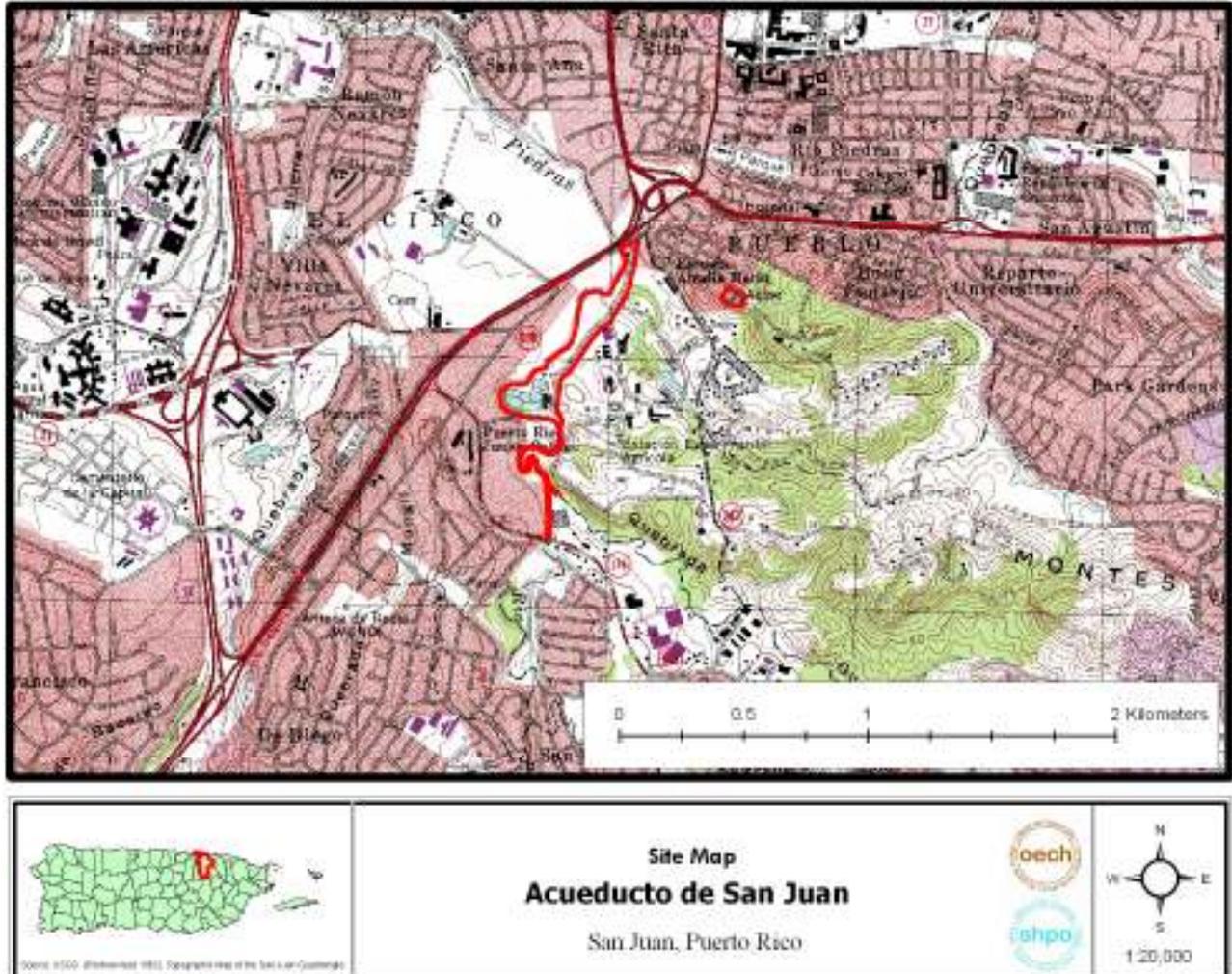


Figure 2 – Location of site in USGS map San Juan quadrangle

United States Department of the Interior  
National Park Service

# National Register of Historic Places Continuation Sheet

\_\_\_\_\_  
Name of Property

\_\_\_\_\_  
County and State

\_\_\_\_\_  
Name of multiple property listing (if applicable)

Section number \_\_\_\_\_ Page \_\_\_\_\_

## SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 07000585

Date Listed: June 21, 2007

Property Name: Acueducto de San Juan

County: Puerto Rico

State: Puerto Rico

none  
Multiple Name

-----  
This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.

*for* Daniel J. Viana  
Signature of the Keeper

June 21, 2007  
Date of Action

Amended Items in Nomination:

### Section 5. Classification

One non-contributing building is hereby added to the number of resources within the property, which brings the total resource count to fourteen contributing and one non-contributing resources.

### Section 8. Statement of Significance

The period of significance is hereby changed to 1892-1957.

[These changes were made in consultation with and approved by the National Register staff of the Puerto Rico SHPO.]

\_\_\_\_\_  
The Puerto Rico State Historic Preservation Office was notified of this amendment.

### **DISTRIBUTION:**

- National Register property file**
- Nominating Authority (without nomination attachment)**