

# CONCEPTUAL MITIGATION PLAN FOR THE CITY OF PORTLAND INDIAN POINT PARKING LOT EXPANSION PROJECT San Patricio County, Texas

# I. Proposed Project and Mitigation Objectives

#### A. Project Description and Impacts

The City of Portland (the Applicant or City) proposes to expand the existing parking lot at Indian Point Pier in San Patricio County, Texas (**Enclosure A, Sheets 1 – 5**). The purpose of the proposed Project is to provide additional parking spaces for the anticipated need from the Indian Point Pavilion project. Currently, only 45 parking spaces are available. Once the new facility and other features are constructed, Indian Point Pier will be a frequented destination and will require additional parking to avoid overflow parking within non-paved areas that surround the existing parking lot and consist of sensitive coastal habitats.

Expansion of the parking lot would result in permanent impacts to 0.22 acre of estuarine emergent wetland and 0.001 acre of estuarine scrub-shrub (mangrove) wetland jurisdictional under Section 10/404. Temporary impacts are anticipated to occur within a 2-foot perimeter on the north and west sides of the project site, a total of approximately 0.009 acre of temporary impacts in jurisdictional areas. **Table 1** provides a summary of proposed impacts within jurisdictional areas.

Table 1. Summary of Jurisdictional Impacts Requiring Compensatory Mitigation

Name	Wetland Type	Existing Acres	Proposed Impacts	
			Permanent	Temporary
W-1	Estuarine Emergent	0.55	0.22	0.008
W-2	Estuarine Scrub-Shrub (Mangrove)	0.17	0.001	0.0008
OW-1	Estuarine Open Water	0.01	0.00	0.00
	TOTALS	0.73	0.221	0.009

Approximately 0.22 acre of estuarine emergent wetland and 0.001 acre of estuarine scrub-shrub wetland (mangrove) will be permanently impacted because of the proposed parking lot expansion project at Indian Point Pier, totaling approximately 0.221 acre of permanent impacts to jurisdictional wetlands.

#### B. Mitigation Goals and Objectives

The goal of the proposed Mitigation Plan is to provide for the replacement and improvement of the chemical, physical, and biological functions of the waters of the U.S. that will be lost or degraded due to the proposed project. Compensatory mitigation will occur at an off-site location on City-owned land within the same general location as project impacts. The off-site mitigation area is located approximately 1.5 miles northeast of the project location within Sunset Lake Park (Enclosure B, Figure 1). See Section II.B for considerations of on-site and off-site mitigation locations.

As compensatory mitigation for permanent impacts from the proposed project, the City proposes the following mitigation objectives:

i. Estuarine Wetland Creation – the City proposes to create approximately 0.70 acres of estuarine wetland areas in disturbed uplands adjacent to existing estuarine emergent wetlands and tidal flats in Sunset Lake Park. The City proposes to create three specific estuarine wetland types: sand flat (0.03 acre), emergent low marsh (0.38 acre), and emergent mixed marsh (low to high marsh; 0.31 acre). The City is not proposing the creation of mangrove habitat given the minimal amount of impacts to mangrove habitat from the proposed project. In addition, the City is proposing a 3 to 1 mitigation ratio (mitigation acres to impact acres) to compensate for impacts to wetlands at the project site. The proposed mitigation is expected to provide increased ecological function to the proposed mitigation site as well as the region.

The proposed compensatory mitigation site is located on Indian Point south of TX-35 N/US-181 N and within the eastern portion of Sunset Lake Park on a former gas well pad site located along Sunset Drive (Enclosure B, Figure 2). The approximate center location of the proposed mitigation site is latitude 27.865136°; longitude -97.335248° (UTM 14 R 663899.00 m E, 3083376.00 m N). The creation of estuarine emergent wetlands at the proposed mitigation site will replace essential fish habitat, water filtration, tidal water buffer, and wildlife habitat functions lost due to the impacts of the proposed project.

#### II. Site Selection Information

### A. On-Site Wetland Mitigation Considerations

The proposed project site is on Indian Point located south of TX-35 N/US-181 N along the Corpus Christi Bay shoreline in an area referred to as Indian Point Pier. Indian Point Pier includes a small area of upland habitat that contains existing infrastructure (road, parking lot, walkways and pier) surrounded by predominantly estuarine marsh complex and

shallow estuarine waters of Corpus Christi Bay. The shoreline along both the east and west sides of Indian Point have significantly eroded over time. The point itself has not experienced significant erosion, most likely due to continued maintenance of the area and shoreline revetment (concrete rubble/debris) (HDR, 2012). However, the remainder of Indian Point is highly influenced by relative sea-level rise and erosion that has resulted in the loss of marsh and tidal flat habitats, ultimately leading to the conversion of these habitats to open water over time (BEG, 2008).

The Coastal Bend Bays & Estuaries Program (CBBEP) and the Texas General Land Office (GLO) recognized the loss of these essential wetland habitats that are used by a multitude of coastal species, including the threatened piping plover, red knot, and eastern black rail, and began installing nearshore rock breakwaters in 2014 to stabilize the shoreline and protect wetland habitats. Additional breakwaters have since been constructed in 2019 to further protect the shoreline and these sensitive habitats. Given the size of the project site and dominance of estuarine wetlands in and around the project site, an on-site wetland mitigation was determined to be impracticable. The overall project footprint was chosen as the preferred alternative because it would result in the least amount of environmental damages and traffic safety concerns while still meeting the purpose and need of the project. As such, an off-site location that could provide the necessary area and habitat to compensate for the loss of habitats from the proposed project was chosen as the most practicable and feasible option.

#### B. Off-Site Wetland Mitigation

The proposed off-site mitigation site is located approximately 1.5 miles northeast of the project site. The mitigation site is located within the same ecoregion as impacts (Western Gulf Coastal Plan [EPA Level III]) and is within the same watershed (North Corpus Christi Bay watershed [8-Digit HUC: 12110201]). The mitigation site provides the necessary size to compensate for impacts at a 3 (mitigation acres) to 1 (impact acres) ratio as well as suitable site conditions and existing adjacent habitats for successful in-kind mitigation. The mitigation site is in a well-protected area within Sunset Lake that is anticipated to have little erosion effects from wind and wave action. Additional site selection criteria included current degradation at the site from oil & gas operations, accessibility to the site and constructability, and hydrologic connectivity to Sunset Lake.

Based on previous site visits at the project site and the proposed mitigation site, similar coastal vegetation occurs within wetland and upland areas of both sites. Mitigation design and future monitoring will be informed by characteristics of local ecosystem succession. Topography in the created wetland will mimic natural transition at the ecotone between

existing tidal wetlands and uplands, as well as the respective wetland plant communities to establish within the mitigation site. It is expected for adjacent plant communities to facilitate natural re-vegetation within the created low marsh and mixed marsh wetlands. Composition of plant species within the created wetlands will be documented during subsequent monitoring events. The proposed created wetlands at the off-site mitigation site is depicted on **Figure 3** in **Enclosure B**.

#### i. Estuarine Emergent Wetland Creation

The selected off-site estuarine emergent wetland creation site is located on an existing gas well pad site adjacent to algal and sand flats, low and high marsh habitats, and shallow estuarine water of Sunset Lake. The well pad site appears to have naturally vegetated since abandonment of the site, but the site still exhibits bare soils and an earthen containment berm typical of well pads along the Texas Gulf Coast (Google Earth Imagery 2020). The creation of estuarine wetlands at this location would result in the replacement of important ecological functions such wildlife habitat and a more natural high tide buffer compared to the existing berm.

The estuarine wetlands will be created through lowering the elevation of the ground within the designated area to allow the area to be inundated by tidal water at frequent and infrequent regimes based on graded elevation. Due to the presence of estuarine emergent wetland adjacent to the creation site, it is anticipated that native coastal vegetation will establish within the created wetland areas naturally except for the proposed sand flat area which would remain relatively bare. The created estuarine wetlands will be self-sustaining as it will be driven by tidal influence and protected from future development. The proposed estuarine wetland creation area is depicted on **Figure 3** of **Enclosure B**.

#### III. Site Protection Instrument

The proposed off-site mitigation area is located within Sunset Lake Park, an approximate 333-acre public park owned and maintained by the Applicant. As such, the mitigation site will be protected from residential, commercial, or industrial development. The Applicant will implement a deed restriction or other similar type of protective instrument that limits uses of the mitigation site to those that are consistent with this mitigation plan. The mitigation site will be managed by the City and incorporated into their management plan for Sunset Lake Park.

#### IV. Baseline Information

#### A. Project Site Resources

The project site consists of approximately 0.22 acre of estuarine emergent wetland (Wetland 1 [W-1]) and 0.001 acre of estuarine scrub-shrub wetland (Wetland 2 [W-2]). W-1 is densely vegetated within the center by mostly saltwort (*Batis maritima*), shoregrass (*Distichlis spicata*), and dwarf saltwort (*Salicornia bigelovii*). The eastern side of W-1 is slightly more elevated than the center and is dominated by sea ox-eye daisy. Based on a site visit conducted on October 19, 2020, soils throughout the majority of W-1 are saturated to the surface. W-2 is dominated by black mangrove (*Avicennia germinans*) and has standing water approximate 0.5-feet deep at the time of the site visit. The boundary between W-1 and W-2 is distinct as the elevation changes drastically and standing water is no longer present.

Open water is present west of the western boundary of the project site (OW-1). The existing parking lot includes an undeveloped boat ramp to allow boat access to Corpus Christi Bay and is located at the southwest corner of the project site. The water line at the time of the site visit, October 19, 2020, and the annual high tide line (HTL) were mapped at the existing parking lot and west of the project site. OW-1 is not present within the project site.

#### B. Existing Resources at the Off-Site Mitigation Area

Based on aerial imagery (Google Earth, 2020), the proposed mitigation site is located at an abandoned well pad site. According to the Texas Railroad Commission data viewer online, the gas well was plugged on July 19, 2007. Since 2007, vegetation has established within the abandoned well pad site, however, an earthen containment berm, access road, well pad sediments and other disturbances such as vehicle ruts are apparent on aerial imagery (Google Earth Imagery 2008 – 2020). The site appears to comprise sand and algal flats, emergent low to high marsh habitats, and upland habitats supporting woody shrub species.

Prior to finalization of this Conceptual Mitigation Plan, baseline conditions within the proposed mitigation site will be determined by conducting a wetland delineation. The delineation will be conducted in accordance with the USACE Wetland Delineation Manual (1987) and the latest guidelines set forth in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region (Version 2.0) (2010).

#### V. Number of Credits to be Provided

#### A. Compensatory Mitigation Credits and Rationale

The project impacts to W-1 and W-2 would result in 0.221 acre of permanent impacts. Proposed mitigation focuses on estuarine emergent impacts since only 0.001 acre of black mangrove will be impacted by the project. The mitigation ratio for impacts to these estuarine wetlands is 3:1. This mitigation ratio is warranted based on the loss of ecological functions provided from estuarine emergent and scrub-shrub wetlands, including the potential habitat they provide for threatened and endangered species and other coastal wildlife that may occur on Indian Point. In addition, the 3:1 ratio is reasonable because:

- There will be little differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project.
- There will be no temporal losses of aquatic functions.
- Difficulty of establishing the desired aquatic resource type and function is expected to be low.
- There is a relatively short distance between the affected aquatic resource and the mitigation site.

The creation of estuarine wetlands at the mitigation site would provide 0.70 acre of credit to offset the proposed project impacts of 0.221 acre with a 3:1 ratio; mitigation acres to impact acres. As described above and summarized in **Table 2** below, the proposed mitigation will provide sufficient compensation (i.e., mitigation credit) to offset unavoidable impacts to aquatic resources resulting from the proposed project. The proposed mitigation plan would be implemented prior to or concurrent with the initiation of project activities. Therefore, no temporal loss of function is anticipated and no compensation for temporal loss is proposed.

**City of Portland** | Indian Point Parking Lot Expansion Attachment I – Conceptual Compensatory Mitigation Plan

Table 2. Summary of Wetland Mitigation Credits to be Provided.

Resource Type	Project Impacts (Acres)	Mitigation Ratio (Mitigation to Impact)	Total Compensatory Mitigation Needed (Acres)	Total Compensatory Mitigation Provided (Acres)
Estuarine Emergent Wetland (W-1)	0.22	3:1	0.66	0.70
Estuarine Scrub- Shrub Wetland (W-2) <sup>1</sup>	0.001	3:1	0.003	0.00
Tota	l Off-Site Mitig	0.663	0.70	

<sup>&</sup>lt;sup>1</sup> Compensatory mitigation for impacts to mangrove habitat will be provided through creation of estuarine emergent wetland.

# VI. Mitigation Work Plan

#### A. Work Plan Specifications

Creation of the mitigation estuarine wetlands will be completed within 6 months of the start of work in jurisdictional areas. The Applicant will be responsible for constructing the mitigation wetlands. The mitigation estuarine wetlands will be excavated to elevations conducive to recruitment and survival of target species (exact elevations will be determined through preconstruction reference elevation surveys of existing natural wetlands at the mitigation site). Excavated material will be placed within delineated upland areas of the well pad site, hauled offsite and disposed of properly, and/or used as base material for the proposed parking lot expansion in the project site. Activities and timing would include:

- Excavate and grade uplands adjacent to existing estuarine wetlands at the gas well pad site. The proposed 0.70-acre estuarine wetland creation site would expand on the adjacent, existing wetland and create a transition zone between tidal waters and uplands at the mitigation site (Enclosure B, Figures 3 - 5).
- Topsoil from the impacted estuarine emergent wetland (W-1) on the project site would be
  preserved and used at the mitigation site (low marsh and mixed marsh areas) to support
  natural re-vegetation. The topsoil would be spread at the mitigation site once target
  elevations have been reached. It is expected that the topsoil and natural re-vegetation
  from succession of the existing seed bank will be sufficient to meet success criteria.

However, planting of appropriate estuarine species would be considered, if necessary (see **Section XI. Adaptive Management**).

#### B. Work Plan Sequence and Time

Construction activities at the mitigation site would be completed within 6 months of the start of work in jurisdictional areas at the project site and would be complete within 1 month of beginning work at the mitigation site. The mitigation work plan schedule would be coordinated with the construction schedule of the parking lot expansion due to the plan to use topsoil from the impacted wetlands to seed the mitigation creation area and the potential use of excavated material from the mitigation site in the project site.

#### VII. Maintenance Plan

The Applicant will be responsible for maintaining the created mitigation wetland to remain in compliance with this mitigation plan. Five years of mitigation monitoring is required, or other actions are required by the USACE for the site to meet target success criteria. Once the USACE has determined that success criteria have been met, maintenance of the wetland mitigation site will be the responsibility of the Applicant.

A site visit to the mitigation area will be conducted on a quarterly basis and after a major storm event (i.e. hurricane or tropical storm) (see **Section IX. Monitoring and Reporting Requirements**). Maintenance of the site will be conducted as needed and may include activities such as:

- anthropogenic debris removal,
- invasive species removal, and
- erosion repairs, as needed.

# VIII. Ecological Performance Standards

The proposed estuarine mitigation wetland will be created by excavating to elevations similar to the surrounding flats and low marsh habitats. Key elevations will be those that promote hydrologic connection with the present highwater table at the site and that provide a hydrologic connection with tidal waters from Sunset Lake. It is anticipated the mitigation wetland will have a gradual slope upwards from Sunset Lake towards the center of the well pad. As a result, the mitigation wetland will include some sand or algal flats (approximately 5% or 0.03 acre), low estuarine marsh (approximately 45% or 0.31 acre), and mixed (low to high) estuarine marsh habitats (approximately 50% or 0.38 acre). Percent vegetation cover for monitoring purposes would be recorded within the low and mixed estuarine marsh habitats that make up 95% of the mitigation wetland (or 0.69 acre). Success of wetland mitigation efforts in the proposed estuarine emergent wetland creation area will be evaluated using the following standards:

<u>Year 1</u> – Vegetative percent cover of target wetland vegetation (see below) in created emergent estuarine areas shall be equal to or greater than 25% after one complete growing season or 1 year after construction, whichever is longer. Invasive species establishment will be recorded, and early removal and/or treatment will be conducted in accordance with current management strategies performed by the City within Sunset Lake Park. In addition, erosion will be only minor or moderate estimated using visual markers such as scarping.

<u>Year 2</u> – Vegetative percent cover of target wetland vegetation in created emergent estuarine areas shall be equal to or greater than 50% after two complete growing seasons or 2 years after construction, whichever is longer. Invasive species establishment will be recorded, and removal and/or treatment will be conducted in accordance with current management strategies performed by the City within Sunset Lake Park. In addition, erosion will be only minor or moderate estimated using visual markers such as scarping. If erosion is observed to be severe, additional maintenance or adaptive management measures will be implemented.

<u>Year 3</u> – Vegetative percent cover of target wetland vegetation in created emergent estuarine areas shall be equal to or greater than 75% after three complete growing seasons or 3 years after construction, whichever is longer. Total aerial coverage of invasive species may not exceed 5% of the monitored area and erosion will be only minor. If the site meets success criteria after Year 3 or is similar to the reference site in vegetative cover by 5 percent and hydrologic indicators, the USACE may determine that no additional monitoring is required. If 70% vegetative cover is not achieved after 3 years, the USACE will determine if planting of the mitigation wetland is required and if implementation of adaptive management strategies is necessary to protect against erosion of the mitigation wetland.

<u>Year 4</u> – Vegetative percent cover of target wetland vegetation in created emergent estuarine areas shall be equal to or greater than 75% after four complete growing seasons or 4 years after construction, whichever is longer. Total aerial coverage of invasive species may not exceed 5% of the monitored area and erosion will be only minor. In addition to vegetation cover, the site should exhibit at least one primary or two secondary hydrology indicators. If the site meets success criteria after Year 4 or is similar to the reference site in vegetative cover by 5 percent and hydrologic indicators, the USACE may determine that no additional monitoring is required. If 70% vegetative cover is not achieved after 4 years, the USACE will determine if planting of the mitigation wetland is required and if implementation of adaptive management strategies is necessary to protect against erosion of the mitigation wetland.

<u>Year 5</u> – Vegetative percent cover of target wetland vegetation in created emergent estuarine areas shall be equal to or greater than 75% after five complete growing seasons or 5 years after construction, whichever is longer. Total aerial coverage of invasive species may not exceed 5% of the monitored area

and erosion will be only minor. In addition to vegetation cover, the site should exhibit at least one primary or two secondary hydrology indicators, and one hydric soil indicator. If a hydric soil indicator is not present but all other criteria are met and hydrology indicates conditions similar to the reference site have been present for at least 3 years, the USACE may determine that no additional monitoring is required. If erosion is more than minor, the applicant will notify the USACE and implement adaptive management strategies to protect against erosion of the mitigation wetland.

# IX. Monitoring and Reporting Requirements

A post-construction assessment of the created estuarine wetland, including a survey of the boundary and elevations within the grade-modified areas, will be conducted after construction of the created area is complete. The Applicant will provide record drawings of the grade-modified mitigation area to the USACE Corpus Christi Regulatory Field Office within 60 days of completion of grade modification in the wetland creation area. The record drawings will document final elevations and will state total acreage of the grade-modified wetland creation area.

The created wetland will be visually monitored once per year for a period of 5 years. Annual monitoring will be conducted in the spring or summer to document site performance in the context of the Ecological Performance Standards described above. Monitoring and reporting will be conducted in accordance with USACE Regulatory Guidance Letter 08-03. Annual monitoring report will include:

- A description of monitoring methodology,
- Estimated vegetation composition including total percent cover and percent cover by each vegetation species,
- Assessment of the overall condition of the wetland, including physical markers that are indicative
  of salinity, inundation, and overall wetland establishment,
- The presence of erosion or sedimentation within the created wetland or in the surrounding area that may have detrimental effects to the mitigation area,
- Photographic documentation of site conditions, and
- Record drawings of the grade-modified areas, including the elevations, boundary, and total acreage.

The Applicant will be responsible for completing the monitoring and reporting. The monitoring reports will be submitted to the USACE within 30 days after completion of the monitoring event. The USACE may waive the requirement for reporting at any given point during the 5-year period if the USACE deems that there is sufficient evidence that re-vegetation of the mitigation area meets the success criteria.

# X. Long-Term Management Plan

The created wetland mitigation site is within Sunset Lake Park, a city park owned and operated by the City of Portland. The City will incorporate the mitigation site into their long-term management plan for Sunset Lake Park and will continue to manage the site in accordance with conservation goals. Sunset Lake Park was established in February 2000 and includes a trail that was converted from a former rail line. The park provides habitat protection and public use and is an important protected area for the City of Portland. As such, Sunset Lake Park, and the proposed mitigation site within, are expected to remain protected and actively management by the City of Portland for a long-term.

## XI. Adaptive Management Plan

In accordance with 33 CFR 332.7(c)(2), the City will notify the USACE if the mitigation project is not progressing towards meeting its performance standards based on results from monitoring events. Potential setbacks for the proposed mitigation site include erosion, the invasion of Brazilian pepper (Schinus terebinthifolius) or salt cedar (Tamarix spp.) in the created wetlands, the lack of natural vegetation recruitment and expansion in the created wetlands, and unforeseen damages from natural disasters (i.e. tropical storm or hurricane). The applicant will coordinate with USACE in attempt to agree upon the appropriate course of action if performance standards are not being met. Potential remedies may include but are not limited to development of a supplemental monitoring plan, development of a planting plan to address insufficient vegetation cover, implementation of erosion control measures, altering elevations if hydrology is insufficient to promote wetland creation, and the identification of alternative sites for compensatory mitigation, if necessary. Adaptive management to address vegetation cover and shoreline erosion concerns within the estuarine wetland would include planting native coastal vegetation or installing a small protective barrier to prevent erosion, such as a living shoreline or rock sill. The need to implement adaptive management strategies will be evaluated during each annual monitoring event and coordinated with the USACE in annual reports.

In the case of a natural disaster, the City will coordinate with the USACE to revise performance standards or implement adaptive management actions.

#### XII. Financial Assurances

The City of Portland is an established municipality which has demonstrated financial capability and reliability with adequate financial means to expend funds on the required mitigation as described herein. In the event of any changes to the financial assurances for the mitigation site, the USACE will be notified at least 120 days in advance of any termination or revocation.



# XIII. References

HDR. 2012. Indian Point Shoreline Protection Feasibility Study. Coastal Bend Bays & Estuaries Program, Publication No. CBBEP-79. Accessed online https://www.cbbep.org/publications/IndianPointShorelineFeasibility.pdf.

BEG. 2008. Status and Trends of Inland Wetland and Aquatic Habitat in the Corpus Christi Area. CBBEP, Publication No. CBBEP-55. Access online <a href="https://www.cbbep.org/publications/virtuallibrary/2008table/0722.pdf">https://www.cbbep.org/publications/virtuallibrary/2008table/0722.pdf</a>.





**MITIGATION SITE CONDITIONS** INDIAN POINT PARKING LOT EXPANSION CONCEPTUAL MITIGATION PLAN





**FDS** 

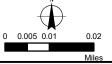
MAY 2021

FIGURE 2



**MITIGATION PLAN** 

INDIAN POINT PARKING LOT EXPANSION CONCEPTUAL MITIGATION PLAN

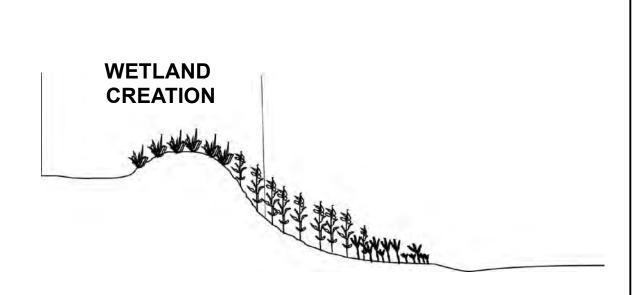




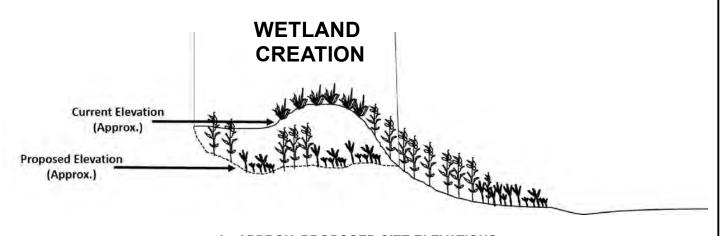
**FDS** 

MAY 2021

FIGURE 3



A - APPROXIMATE SITE ELEVATIONS (NTS)



A - APPROX. PROPOSED SITE ELEVATIONS (NTS)

**CROSS SECTIONS** INDIAN POINT PARKING LOT EXPANSION

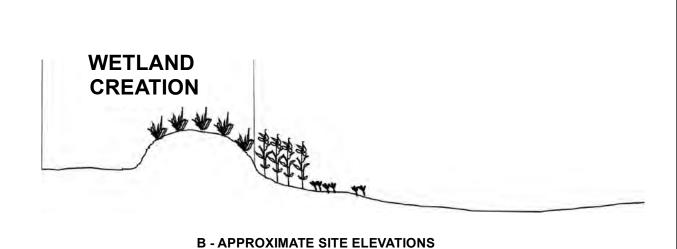
**CONCEPTUAL MITIGATION PLAN** 







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(NTS)



(Approx.)
Proposed Elevation
(Approx.)

B - APPROX. PROPOSED SITE ELEVATIONS (NTS)

# CROSS SECTIONS INDIAN POINT PARKING LOT EXPANSION

CONCEPTUAL MITIGATION PLAN





