**PREQUALIFICATION BIDS AND AWARDS COMMITTEE**

**SELECTION OF JOINT VENTURE PARTNER FOR THE NEW CLARK CITY (NCC) INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) PASSIVE INFRASTRUCTURE PROJECT**

**BID BULLETIN NO. 5, s. 2025**

**ADDITIONAL INFORMATION TO ALL PROSPECTIVE BIDDERS:**

In connection with the ongoing selection of the Joint Venture Partner for the NCC ICT Passive Infrastructure Project and consistent with the provisions of Sec. 1.2 of the Instructions to Bidders, we are issuing this Bid Bulletin to provide interested parties with the Information Memorandum together its Annexes (Annex 1) and the Minimum Performance Standards and Specifications (MPSS) (Annex 2).

Additionally, a map of road developments in NCC (in kmz format) has been uploaded in the data room. Interested parties will be granted access to the data room after purchasing the Bidding Documents and complying with the requirements for data room access in Bid Bulletin No. 2.

This Bid Bulletin No. 5 is being issued to amend, revise, modify and update previous postings/issuances pertaining to the items discussed above related to the subject disposition.

Issued this 2nd day of July 2025.

**PREQUALIFICATION BIDS AND AWARDS COMMITTEE**

**By:**

[SIGNED]
**HEDDA Y. RULONA**
Chairperson

# ANNEX 1

NEW CLARK CITY (NCC) INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) PASSIVE INFRASTRUCTURE PROJECT

The attached Information Memorandum forms part of the documents that BCDA will provide Bidders solely to provide background information on the Project ("BCDA-Supplied Information"). The document is subject to the prospective bidder's own discretion and conduct of due diligence. Bidders are reminded of Sec. 1.7 (Responsibilities of Bidders) under the Instructions to Bidders.

NEW CLARK CITY (NCC) INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) PASSIVE INFRASTRUCTURE PROJECT

# INFORMATION MEMORANDUM

## A. The Project

The Bases Conversion and Development Authority (BCDA) is seeking a Joint Venture (JV) Partner for the implementation of the New Clark City (NCC) Information and Communications Technology (ICT) Passive Infrastructure Project (the "**Project**").

The Project will be implemented as a Public-Private Partnership project in accordance with the Public-Private Partnership Code of the Philippines (PPP Code) and its Implementing Rules and Regulations (IRR). In particular, it will be undertaken under a joint venture (JV) contractual arrangement as defined under the PPP Code. The scope of the JV for the Project will involve the disposition of BCDA's passive ICT infrastructure by carrying out the commercialization, and as necessary, expansion, repair, and maintenance of passive physical ICT infrastructure including, but not limited to, conduits, fiber optic cables, chambers, and colocation facilities, and others in NCC (collectively, "**Passive ICT Infrastructure**"). The JV scope shall also include the last mile connection direct to home or office up to the network termination point within the lettable area of a building, apartment, office or other facility. Infrastructure and services provided by the JV shall be configured to ensure that the end-users in all lettable locations will have a choice of Data Transmission Providers (DTPs). In exchange for its services, the JV shall collect tariffs from its DTP customers in accordance with the terms of the JV Agreement.

The PPP Code, its IRR and the Instructions to Bidders (ITB) shall govern the procurement of the JV. The following details are provided in the ITB and bid bulletins: bid requirements, parameters, description of the forms and documents comprising the bid (e.g., qualification documents, technical proposal and financial proposal), bid submission procedures, procedures for request for clarifications on the bidding documents or meetings with the PPP Pre-Qualification/Qualification, Bids and Awards Committee, bid submission deadlines, and evaluation criteria and process.

The ITB, bid bulletins, the Information Memorandum (IM) and its annexes, and the Minimum Performance Standards and Specifications (MPSS) are publicly available on the BCDA's website to encourage participation of a wide group of potential bidders.

Bidders who intend to submit their bids must purchase the remainder of the Bidding Documents, which will be provided via the Data Room including the Forms and Annexures of the ITB and the draft Joint Venture Agreement (JVA) by paying Two Hundred Fifty Thousand Philippine Pesos (PhP250,000.00) to BCDA. Only bidders who have purchased the Bidding Documents (either from this round of tender or the original

tender[1]) shall be allowed to participate in the Bidding Process and to access the Data Room.

## B. Open Access Business Model

BCDA envisions a **wholesale Open Access Network** business model for the Project to allow DTPs to share Passive ICT infrastructure, such as conduits, fiber optic cables, chambers, colocation facilities, and others. The Passive ICT Infrastructure will be built once and used multiple times, and the Open Access Network business model will serve the interests of all DTPs by offering fiber-based connections to all end-users in homes and offices and on the move. The table below (**Table 1**) compares the typical telecom business model in the Philippines with the Open Access Network business model.

**Table 1: Comparison of current vs. proposed business model**

| | |
|---|---|
| Current business model | - To enable multiple data transmission providers (DTPs) networks to connect to customer demand points, multiple conduits and multiple cables are constructed and deployed.<br>- This requires significant duplication of infrastructure, and capital investment by service providers/operators and increase the demand for space within developments and buildings. |
| Open Access Network business model | - Dark fiber is leased over a common network of conduits and cables, which ensures multiple DTP networks to the customer demand points, operated by an independent wholesale entity deploying, repairing/maintaining and supplying equivalent services to all retail DTPs. |

The Open Access Network Business Model is designed to ensure the development of data transmission infrastructure as part of the fabric of NCC, rather than retrofitted as is required in established cities. This approach will reduce the risks of duplication of network assets, unserved areas, underserved areas and sub-optimal services and solutions. The construction of ducts as part of ongoing and planned real estate development activities in the public and private realm is expected to be the most cost-efficient approach to deploy these assets, when compared to the deployment of multiple assets along the same roads by different parties at different times. Unlit ("dark") fiber can be deployed within these ducts between end-user buildings and a co-location facility, a "Meet Me Room", where DTPs will connect their equipment. This scope will enable a competitive environment for services at a lower cost point across the whole NCC footprint than if each DTP sought to build its own infrastructure in the highest value areas. The approach reflects best practice observed in other new city and municipal developments including Singapore.

## C. Project Area

NCC covers an area of 94.5 km² and is located within Capas, Tarlac. The Project Area map and other essential information related to the city development planning are

[1] Pertains to the original tender of the Project on 25 October 2023.

described in the Annex to this IM ("**IM Annex**"), which potential bidders shall read in parallel to the information contained in this IM.

The Project area map attached as **Annex A** shows the general Land Use Plan for NCC, within which the JV Partner for the Project will have an exclusive mandate to commercialize, and as necessary, expand, repair, and maintain the passive ICT infrastructure. Additionally, **Annex B** shows information on the Floor-Area Ratio (FAR) calculation per each of the land use types.

## D. NCC Development Phases

**Annex C** summarizes the indicative phasing plan for the development of NCC as well as the projected population growth per land use type. Currently, BCDA has executed agreements with various partners who shall be located in NCC. These locators form part of the development Phase 1 (~2028) and the scheduled development Phase 2 (2029-2040). The location of these developments is discussed further in Section E-1 of this IM.

## E. Required Passive ICT Infrastructure

The concept design of the utility corridor to be built along the roads and public highway of NCC covering the entire Project area and shall include the ICT conduits are provided in **Annex D** for bidders' information.

### E-1. BCDA Contribution

**Annex E** indicates the areas within NCC, which BCDA has either built the Passive ICT Infrastructure already or will have such built in the near future with the details of phases, areas, status, length and cost estimates (contribution in PHP) as BCDA plans to address the immediate requirements of the locators in term of passive ICT Infrastructure. **Annex F** shows BCDA's Passive ICT Infrastructure along with the location of its on boarded locators and the status of their developments.

Potential bidders shall note that BCDA is using its own budget in advancing the construction of the Passive ICT Infrastructure in **Annex F** and this will be counted as BCDA's contribution to the JV. However, as prescribed in the JVA, BCDA's equity will be limited to 40% therefore, in case according to the cost estimates and financial model of the potential bidder, it is expected that BCDA's equity in the JV will exceed 40% of the total investment cost to achieve First Service Date (please see the definition in Section E-3. Key Project Milestones below), then the JV shall treat the exceeding amount as a debt to BCDA that can be repaid upfront (in case the winning bidder is able to obtain debt at a lower cost than what is provided by BCDA) or amortized over a tenor of ten (10) years accruing interest at 8% per annum. Both principal and interest will be repayable on a quarterly basis (the principal shall be repaid in equal installments).

## E-2. New Passive ICT infrastructure to be contributed by the JV Partner

Once awarded with the JVA, the JV Partner shall ensure that the NCC Passive ICT Infrastructure is built in a timely manner to meet the growing demand of the city. The JV Partner shall ensure the achievement of the Key Project Milestones provided in Section E-3 and of all key performance indicators as described in the MPSS, which has also been made available by BCDA on its website and shall be read in conjunction with this IM to support high quality connectivity services within the NCC.

In case the BCDA's contribution as described in section E-1 is not sufficient to meet the growing demands of the City, it shall be always the responsibility of the JV Partner to predict any shortfall and finance and lay additional conduits and fibers as needed, and address any potential issues ahead of time.

To facilitate the cost estimation of the potential bidders, the following summary of preliminary GIS assessment of NCC roads is provided in **Table 2** below along with the map showing the road locations **Annex G.** For those with the access to the Project's Data Room, relevant maps are also available in the Data Room in KMZ format. Bidders are reminded that all information herein including kilometers of road, current status of locators and potential demand among others are provided to bidders to facilitate their own conduct of due diligence required to accurately assess the roles and responsibilities in case it is selected to become the JV Partner.

**Table 2: Summary of Preliminary GIS assessment of NCC roads**

| Road Classification | | Length in KM (GIS Generated; subject to actual survey/design) | Built |
|---|---|---|---|
| **Arterial Roads** | NCC-SCTEX Access Road 1 | 9.15 | Y |
| | NCC-SCTEX Access Road 2 | 2.73 | Y |
| | Airport-NCC Access Road | 19.60 | Y |
| **Collector Roads** | Collector Road 1 | 0.70 | N |
| | Collector Road 2 | 2.12 | N |
| | Collector Road 3a | 1.58 | Y |
| | Collector Road 3b | 1.10 | N |
| | Collector Road 4 | 1.28 | N |
| | Collector Road 5a | 7.90 | N |
| | Collector Road 5b | 1.84 | Y |
| | Collector Road 6 | 0.70 | Y |
| | Collector Road 7 | 2.95 | Y |
| | Collector Road 8 | 3.80 | N |
| | Collector Road 9 | 3.35 | N |
| | Collector Road 10 | 4.41 | N |
| | Collector Road 11 | 2.46 | N |

| Road Classification | | Length in KM (GIS Generated; subject to actual survey/design) | Built |
|---|---|---|---|
| | Collector Road 12 | 0.64 | Y |
| | Collector Road 13 | 1.46 | N |
| | Collector Road 14 | 1.82 | N |
| | Collector Road 15 | 1.17 | N |
| | Collector Road 16 | 1.54 | N |
| | Collector Road 17 | 2.13 | N |
| | Collector Road 18 | 1.35 | N |
| | Collector Road 19 | 2.11 | N |
| | Collector Road 20 | 2.10 | N |
| **Local Roads** | Local Road 1 | 2.23 | N |
| | Local Road 2 | 0.81 | N |
| | Local Road 3 | 1.16 | N |
| | Local Road 4 | 0.71 | N |
| | Local Road 5 | 0.34 | N |
| | Local Road 6 | 1.15 | N |
| | Local Road 7 | 0.28 | N |
| | Local Road 8 | 0.58 | N |
| | Local Road 9 | 0.56 | N |
| | Local Road 10 | 0.15 | N |
| | Local Road 11 | 0.28 | N |
| | Local Road 12 | 1.67 | N |
| | Local Road 13 | 0.66 | N |
| | Local Road 14 | 0.57 | N |
| | Local Road 15 | 1.10 | N |
| | Local Road 16 | 0.24 | N |
| | Local Road 17 | 1.00 | N |
| | Local Road 18 | 3.27 | N |
| | Local Road 19 | 3.20 | N |
| | Local Road 20 | 2.66 | N |
| | Local Road 21 | 0.24 | N |
| | Local Road 22 | 0.70 | N |
| | Local Road 23 | 0.72 | N |
| | Local Road 24 | 1.00 | N |
| | Local Road 25 | 1.40 | N |
| | Local Road 26 | 0.32 | N |
| | Local Road 27 | 0.25 | N |
| | Local Road 28 | 0.26 | N |
| | Local Road 29 | 0.73 | N |
| | Local Road 30 | 1.71 | N |

| Road Classification | | Length in KM (GIS Generated; subject to actual survey/design) | Built |
|---|---|---|---|
| | Local Road 31 | 0.73 | N |
| | Local Road 32 | 0.28 | N |
| | Local Road 33 | 4.45 | N |
| | Local Road 34 | 1.00 | N |
| | Local Road 35 | 0.48 | N |
| | Local Road 36 | 0.28 | N |
| | Local Road 37 | 1.23 | N |
| | Local Road 38 | 0.79 | N |
| | Local Road 39 | 1.32 | N |
| | Local Road 40 | 0.77 | N |
| | Local Road 41 | 0.69 | N |
| | Local Road 42 | 1.39 | N |
| | Local Road 43 | 0.34 | N |
| | Local Road 44 | 0.28 | N |
| | Local Road 45 | 1.29 | N |
| | Local Road 46 | 1.74 | N |
| | Local Road 47 | 0.84 | N |
| | Local Road 48 | 0.42 | N |
| | Local Road 49 | 0.12 | N |
| | Local Road 50 | 1.17 | N |
| | Local Road 51 | 1.10 | N |
| | Local Road 52 | 1.87 | N |
| | Local Road 53 | 0.43 | N |
| | Local Road 54 | 0.33 | N |
| | Local Road 55 | 0.16 | N |
| | Local Road 56 | 1.32 | N |
| | Local Road 57 | 0.88 | N |
| | Local Road 58 | 0.36 | N |
| | Local Road 59 | 0.27 | N |
| | Local Road 60 | 0.27 | N |
| | Local Road 61 | 0.99 | N |
| | Local Road 62 | 1.11 | N |
| | Local Road 63 | 6.30 | N |
| Total | | **144.94** | |
| Total - Built | | **39.19** | |

Source: BCDA

Any additional information to assess the potential demand for the Project, potential bidders shall refer to **Annex H** of this Information Memorandum.

## E-3. Key Project Milestones

The Key Project Milestones are provided in Table 3 below.

**Table 3: Key Project Milestones**

| Milestone | Description | Milestone Completion Date |
|---|---|---|
| **1** | Posting of Construction and Operations Performance Security | Within 20 days from receipt of Notice of Award (before signing of JV Agreement) |
| **2** | Signing of the JVA | Within 5 days from receipt by the winning bidder of notice of compliance with all post-award requirements |
| **3** | Commencement Date | Within 90 days after the signing date of the JV Agreement, or such other date as the Parties may agree on |
| **4** | Financial Close | Within 30 days from Commencement Date |
| **5** | Design and Construction | On or after Commencement Date |
| **6** | First Service Date (Commencement of Commercialization or provision of the Minimum Connectivity Services Requirement under the JVA ) | On or after 180 days from Commencement Date |
| **7** | Initial Reference Tariff Offer Period | Starting on the First Service Date until the 10th anniversary of the First Service Date |
| **8** | Repair and Maintenance | Starting on the date stipulated in the Implementation Plan |
| **9** | 1st Rebasing Period | 1st day after the end of the Initial Reference Tariff Offer Period up to the 5th anniversary of the end of the Initial Reference Tariff Offer Period |
| **10** | 2nd Rebasing Period | 1st day after the end of the First Rebasing Period up to the 5th anniversary of the end of the First Rebasing Period |
| **11** | 3rd Rebasing Period | 1st day after the end of the Second Rebasing Period up to the 5th anniversary of the end of the Second Rebasing Period |
| **12** | Expiration Date of the JVA | 25 years from First Service Date (may be extended with a period of up to 25 years subject to the mutual agreement of the Parties) |
| **13** | Training of Personnel | Prior to Transfer Date |
| **14** | Posting of Transfer Security and Warranty Security | No later than five (5) business days prior to Transfer Date |

| Milestone | Description | Milestone Completion Date |
|---|---|---|
| **15** | Transfer Date | Expiration Date or date of early termination (if applicable) of the JVA |

**E-4. Lock-up rules applicable to the JV Partner**

In addition to the lock-up rules applicable during the Bidding Process, after the signing of the JVA, the JV Partner shall be bound by the following lock-up conditions i.e., Within seven (7) years from establishment of the JV company, the JV Partner shall not be permitted to transfer or assign any or all of its legal, beneficial or equitable interest in the JV other than in exceptional instances, such as a transfer of the legal title of one (1) qualifying share to a nominee director in the JV company.

## Appendix A. Additional information on NCC and the Passive ICT Infrastructure Project

The additional information in this Appendix A is excerpts from the 2023 Pre-Feasibility Study commissioned by BCDA for the Project. The information that follows is being shared as part of BCDA-Supplied Information to assist bidders in making their own assessments of demand and investment requirements for the Project.

### 1. Development of NCC

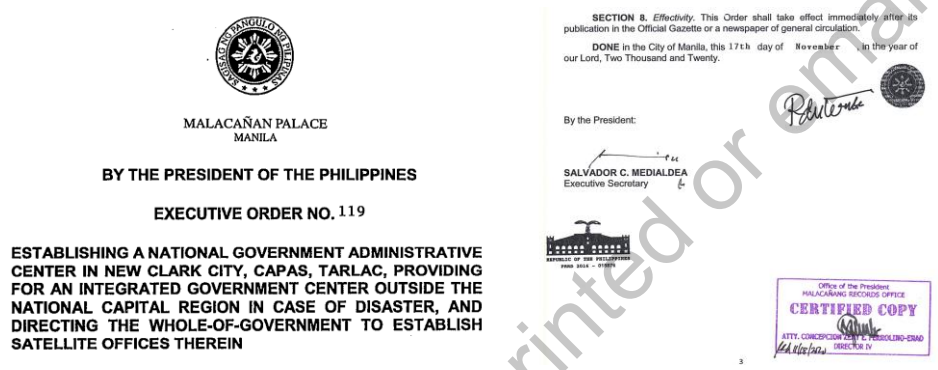
New Clark City (NCC) was first conceived in 2012 as "Clark Green City". The BCDA held a competition in January 2015 to select AECOM Singapore PTE Ltd. to prepare the City's masterplan, which became the basis for further refinement onward. In 2016, the BCDA signed partnerships to develop the city masterplan with AECOM, the Japan Overseas Infrastructure Investment Corp. (JOIN), IVL Swedish Environmental Research Institute and Vivapolis. JOIN formed a joint venture with the BCDA to establish the Philippine Japan Initiative for CGC Inc. (the "PJIC") for the purpose of preparing a Comprehensive Master Development Plan (the "CMDP") and conducting the development management including survey work and basic design for the development guideline of the NCC. The BCDA and JOIN also partnered with Surbana Jurong ("SJ") of Singapore for the preparation of the Design Standards and Guidelines (DSG) for NCC, among others.

In 2017, the Consortium of Nippon Koei Co., Ltd., AECOM, and Philkoei International Inc. ("PKII") completed the CIMDP. A first outline of the data transmission infrastructure and services component for NCC was included in the 2020 update to the NCC Masterplan.

The NCC Sports Facilities and Athlete's Village were completed in time to deliver facilities to host the 2019 Southeast Asian Games (SEA Games). The construction of the National Government Administrative Center (NGAC) was also completed during this time. NGAC and the NCC development appear to benefit from Executive Order 119, signed in November 2020, which orders national government agencies to establish satellite or field offices in NGAC. Other locators have committed to taking up offices in NCC. These include the following large organizations: University of the Philippines and two other universities; the Philippines' first National Seed Technology Park; and a major High School, among others.

**Figure 1: Overview of Executive Order 119**

***Executive Order 119 (EO119)*: Although not a formal obligation for any arm of government, EO119 requires that NCC set up a resilient disaster recovery site for Manila, such that always-on broadband should be a prominent feature of the NCC ICT infrastructure planning. Ensuring the resilience of other critical national infrastructure, including electricity and blue light services, should also be considered as part of the deployment approach.**



MALACAÑAN PALACE
MANILA

BY THE PRESIDENT OF THE PHILIPPINES

EXECUTIVE ORDER NO. 119

ESTABLISHING A NATIONAL GOVERNMENT ADMINISTRATIVE CENTER IN NEW CLARK CITY, CAPAS, TARLAC, PROVIDING FOR AN INTEGRATED GOVERNMENT CENTER OUTSIDE THE NATIONAL CAPITAL REGION IN CASE OF DISASTER, AND DIRECTING THE WHOLE-OF-GOVERNMENT TO ESTABLISH SATELLITE OFFICES THEREIN

SECTION 8. *Effectivity*. This Order shall take effect immediately after its publication in the Official Gazette or a newspaper of general circulation.

DONE in the City of Manila, this 17th day of November in the year of our Lord, Two Thousand and Twenty.

By the President:

SALVADOR C. MEDIALDEA
Executive Secretary

Office of the President
MALACAÑANG RECORDS OFFICE
CERTIFIED COPY
ATTY. CONCEPCION [illegible]
DIRECTOR IV

**Source: Government website**

As a result of the Executive Order, government departments have begun to schedule their expected dates for locating some of their service in NCC. These plans are regularly updated. The schedule at the time of writing is shown in Figure 2.

**Figure 2: Scheduling plan for government departments responding to Executive Order 119**

| PHASE | Phase I | | | Phase II | | | | Phase III |
|---|---|---|---|---|---|---|---|---|
| CLUSTERS | Office of the President (OP), NDRRMC Vice Chairpersons, Leads of Response Clusters, and Warning/Science Agencies | | | Disaster Response and Early Recovery Thematic Pillar Members | | | | All NDRRMC Member Agencies and other NGAs |
| AGENCIES | OP | DND-OCD | DICT | CAAP | DPWH | LMP | PIA | |
| | DND | DND-AFP | DFA | CHED | DILG-BFP | LPP | PRC | |
| | DOST | DILG-PNP | DENR-MGB | DA | DTI | LnB | PCOO | |
| | DILG | DILG-BFP | DOST-PAGASA | DBM | DOTr | MMDA | TESDA | |
| | DSWD | DepEd | DOST-PHIVOLCS | DOE | DOTr-MARINA | NAPC | ULAP | |
| | NEDA | DOH-HEMB | CCC | DHSUD | DOTr-PCG | OPAPP | | |
| | | DOH-EB | | DOLE | LCP | PCW | | |

Source: Letter from National Disaster Risk Reduction and Management Council (February 3, 2022)

The guidance from the National Disaster Risk Reduction and Management Council in a letter dated 3 February 2022, indicates that the BCDA's role is to "secure advantageous,

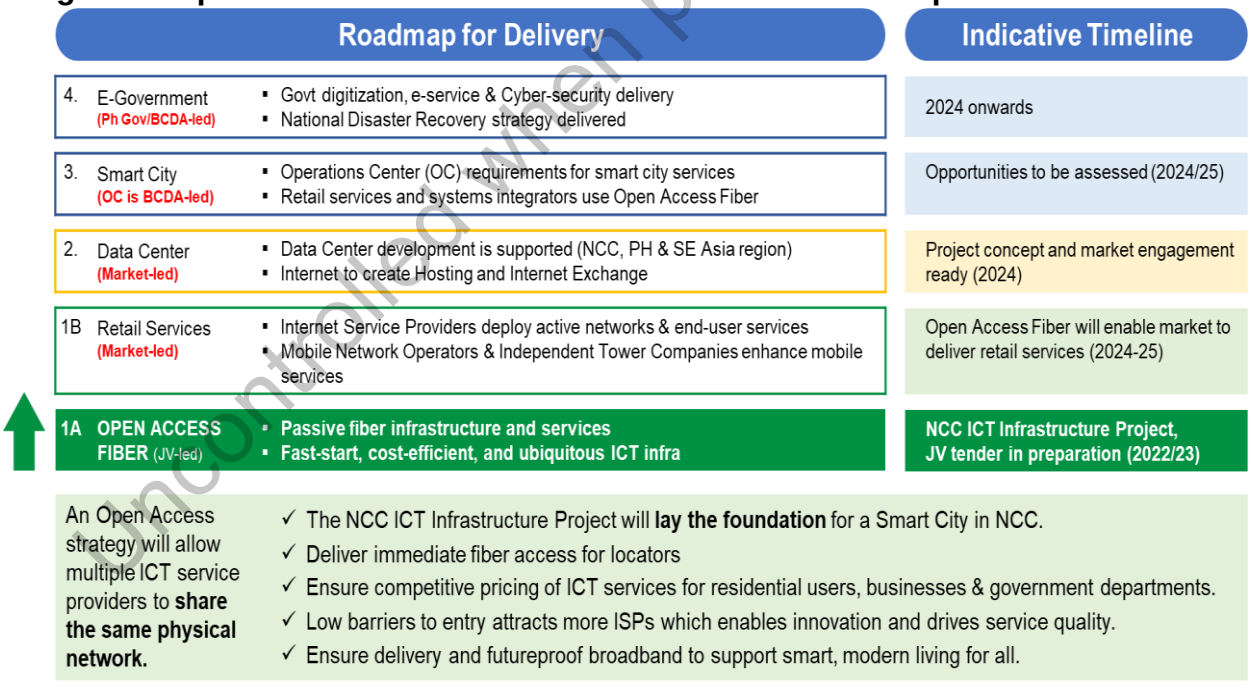
cost-efficient and flexible logistical and financial arrangements relative to the establishments of respective Satellite or Field offices. The data transmission infrastructure and services initiative will support the BCDA in delivering the data transmission components in a cost-efficient and flexible manner that can adapt to the requirements of different DTPs that may be serving the interests of each Government department.

It is noted that these phases are not yet aligned to specific dates and do not therefore map to NCC's own phasing of the general development of NCC.

## 2. Vision of the NCC and Open Access Fiber as enabler for subsequent ICT Initiatives

The vision of the NCC Open Access strategy is to create a vibrant and innovative market for data transmission services that serve the interests of government, enterprise and citizens. A clear approach to fiber-based connectivity will reduce uncertainty for locators, end-users and potential bidders in those initiatives. A representative outline of how and when the initiatives could leverage the Open Access fiber infrastructure and services is shown in **Figure 3** below.

**Figure 3: Open Access Fiber initiative as enabler for subsequent ICT initiatives**




Source: Consultants

## 3. NCC Masterplan and ICT Component

The 2020 NCC Masterplan (an update to the CIMDP) and its ICT chapter address the data transmission needs of NCC. This includes both the minimum core requirements as well as potential opportunities for further development. For illustration purposes, the **IM Annex** shows available concept plans on the minimum core requirements lifted from the Masterplan and are described herein:

- Utility corridor and provision of communication conduits/conduits within the roads and public highway;
- Requirements for mobile services and base station infrastructure;
- Requirements for interconnection between operators within a 'switching center'; and,
- Forecast of demand for internet access and its expected growth during the development and growth of NCC.

From an infrastructure perspective, the focus was on the utility corridor and provision of sufficient capacity of conduits for multiple operators to deploy their own fiber cables. Accordingly, the Masterplan includes a high-level assessment of the data transmission component in addition to outlining technical details for deployment of roads and other utilities. It also recommends that private telecommunication companies implement fiber-based data transmission systems and that the BCDA install high-density polyethylene (HDPE) conduit pipes, manholes and hand-holes for future cabling works.

The Project intends to implement such a plan through the selection of the Joint Venture (JV) Partner that will operate under the proposed Wholesale Open Access Network strategy. The assets are built once and used multiple times by multiple providers sharing the same physical network and associated costs. The Open Access business model will serve the interests of all Data Transmission Providers (DTPs), by offering fiber-based connections to all end-users.

## 4. Current status of data transmission infrastructure and services in NCC

The Philippine market supports multiple operators, is competitive and attractive to new entrants. However, many of these investments have led to duplication of assets while in NCC there has been limited private sector led investment. The BCDA has an opportunity to harness the competitive market and attract DTPs to optimize the data transmission services that will be available for locators.

### 4.1. Fixed data transmission infrastructure in NCC can be used as an anchor for JV

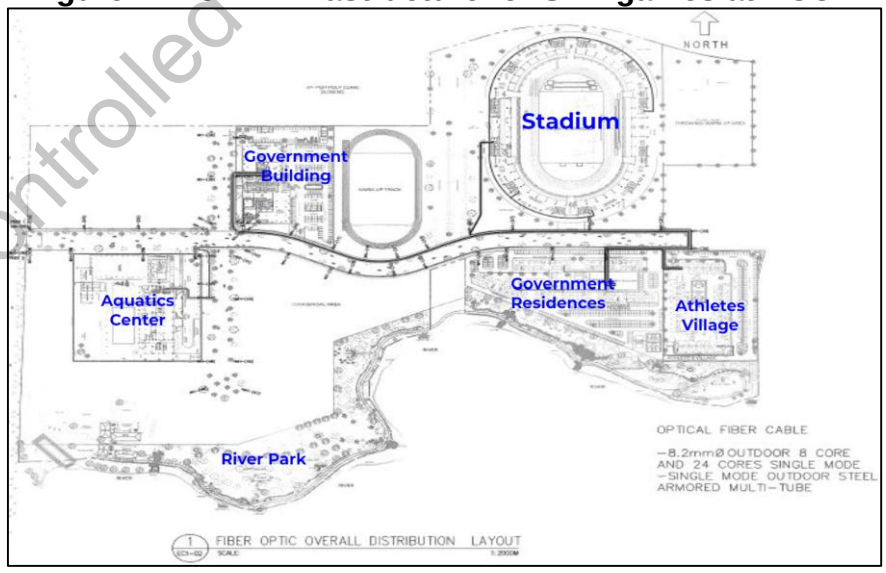
While the BCDA has installed significant road infrastructure throughout NCC as part of its initial NGAC development and collaboration with Filinvest, the majority of roads do not include any data transmission conduit infrastructure. These roads will need to be retrofitted, to ensure all customers and locators can benefit from the same data transmission services.

The development of premises on the locator plots is at varying stages of completion, with some areas well developed, predominantly around NGAC, which was completed for the 2019 SEA Games, while other areas have only been cleared in preparation for construction. The developers' approach is clearly aligned to construction in line with demand. Data transmission infrastructure will need to be deployed in parallel to avoid assets standing unutilized.

The assets created for the SEA games in 2019 provided a foundation upon which to build out across NCC. Some underground conduit infrastructure was installed between the major buildings, illustrated in Figure 4. The footprint is limited and does not cover the new areas being developed in NCC during Phase 1, but it does provide an initial anchor infrastructure for the JV operator to utilize.

PLDT, Globe and Converge installed optical fiber cables to connect to the NGAC ducted network for the SEA games, however all three operator networks are on a common aerial pole infrastructure from the Capas Highway/O'Donnell Road, which does not provide resilience for NCC. As no easements/wayleaves have been agreed, they should be required to shift assets into underground ducting once duct and a Meet-Me Room (MMR) are available. Additional routes, potentially along the Clark airport road and the NCC Subic-Clark-Tarlac Expressway (SCTEX) Access Road, will be required to ensure resilience for the locators and DTPs at NCC. Duct routes along certain roads are being considered to be built by the BCDA as part of its contribution to the JV. The ducts will then be made available for use by the JV, which shall lease out duct space with fiber optic cable to DTPs to enable connection to the MMR., without rights for DTPs to break out and operate their own fiber network within NCC.

**Figure 4: BCDA infrastructure for SEA games at NCC**




Source: BCDA

The existing fiber cables are connected to a 'data center'. This facility is, in fact, a temporary equipment space in the foyer of the NGAC building. These facilities were connected through the NGAC conduits to provide services for the SEA games. A proposal has been made to relocate the equipment to the Stadium, where internet transit capacity from the Facebook cable is to be terminated. However, neither the existing 'data center' in the NGAC building, nor the proposed location in the stadium, are considered satisfactory for an MMR.

Options for an MMR that might be considered by the JV include:

- Relocatable Equipment Building. Telcos regularly use relocatable equipment buildings to house telecoms equipment, which are prefabricated off-site to meet the specification and can be deployed and installed quickly. There could be sufficient internal space for 10 – 15 racks for fiber termination and DTP equipment. This could meet a short-term need and medium-term separate location for redundancy.
- Data Center. A commercially-developed data center would provide a mutually beneficial opportunity to bring all the fiber and data requirements together to provide a high service-level capability. The JV's requirement, combined with other Government demand, would be an anchor tenant opportunity for a data center and could encourage earlier development.

As part of its scope under the Project, the JV is required to develop an MMR and co-location facility, together with required access duct for the interconnection of existing fiber networks to the MMR, as a priority, and that the existing facility in the NGAC building is retained until the JV establishes the MMR and co-location facility.

### 4.2. Wireless coverage has temporary solution, but permanent solution required

There were no permanent mobile network towers or cell sites, nor plans to establish them, within the NCC area in mid-2022, although there was some incidental coverage provided by cell sites outside of the area. The ICT Masterplan assessed the availability of mobile network service and identified that:

> *"temporary cellular network base transmitter station (BTS) sites within the NGAC area. Links to these BTS sites are using fiber-optic cables (FOC) in order for them to provide the 3G to 4G-LTE cellular network technology.*
> *Other areas within the NCC, aside from the NGAC area, have no wireless cellular network signals.*
> *However, weak and intermittent 2G/3G/4G signals from the cellular network base stations in Camp O' Donnell, Cristo Rey and Dapdap areas, […] were detected in the northern and eastern outlying areas."*[2]

[2] ICT Masterplan (Task C.8 - Information and Communication Technology (ICT) System, Final Design Report, Nippon Koei Co. Ltd and Philkoei International Inc (PKII).

During the SEA games, the mobile operators enhanced their coverage with temporary 'Cell-on-Wheels' (CoW), which are regularly deployed for major events with large crowds. It is understood that these were all removed after the games.

### 4.3. Design Standards and Guidelines

The Design Standards and Guidelines (DSG) build on the ICT Masterplan and introduce additional requirements, in particular on the requirements for developers. The DSG address the following issues at a high-level:

- Design Criteria: compliance to national design and construction criteria and building code's requirements;
- Telecommunication Component Space: Locator shall provide space and access to accommodate the telecommunications requirements of the service providers;
- Television Antenna: provision of communal television antenna and restriction on the installation of other antennas; and,
- Cellular Phone Site: requirement to secure the BCDA's written endorsement for any cellular phone sites.

The DSG envisages that developers will enable the provision of infrastructure and is silent on the requirements from a technical perspective and does not provide detail on how a common network or multiple operator conduit/cable networks should be installed.

### 4.4. Overall assessment: Open Access as a proposed business model for NCC

The NCC Masterplan considered customer demand through expected internet bandwidth demand and forecast growth. However, it did not consider the customer connection infrastructure and what was needed to support a competitive market right through to the customer point of demand in apartments, offices and retail outlets.

To enable multiple DTP networks to connect to customer demand points, either multiple conduits and multiple cables, or dark fiber leasing over a common conduits and cables could be considered. Construction of multiple conduits and cables would require significant duplication of infrastructure, and capital investment by service providers/operators, which would increase the demand for space within developments and buildings. Instead, dark fiber leasing over a common network of conduits and cables – also known as Open Access model – could ensure multiple DTP networks to the customer demand points, operated by an independent wholesale entity deploying, repairing/maintaining and supplying equivalent services to all retail ISPs.

The open access fiber network to all retail ISPs requires the conduit and building risers to be incorporated within the civils and building works. Standards will vary depending on the building usage and expected occupancy, but overarching technical specifications for each use category, for instance, commercial, retail, apartment blocks/multi-dwelling units

and individual houses, should be defined to ensure interoperability. Fiber will be deployed by the JV to ensure continuity over land boundaries and minimize fiber jointing.

## 5. Market Context

This section outlines the expected evolution of market demand and features of regulation for fixed and wireless businesses that help determine the area in need of the BCDA's market intervention to address that demand. The section outlines how the Open Access model could address this need and how it could work in practice.

### 5.1. Drivers of market demand

In terms of bandwidth requirements, the BCDA team has considered the objectives of NCC's data transmission infrastructure and services project and the Philippines' National Broadband Plan, which both indicate that fiber should be planned for across NCC and the rest of the Philippines in urban areas. The range of retail services responding to the varying demands of different customer types that can be expected in the NCC footprint based on today's emerging requirements include the following:

- ***Consumer services***: always-on fixed and wireless services including video telephony, streaming services, video-gaming, Augmented and Virtual Reality (AR/VR), various life applications for flights, health services, tax;
- ***Enterprise services***: video conferencing, AR/VR, file sharing, Internet of Things, Machine Learning, Field force operations, 3D survey/design technology, Digital signage, Smart agriculture;
- Utility services: Asset monitoring, Fault finding, Predictive operations, Field force operations, Customer service analytics, Smart city applications, Transport monitoring, Sensing, and monitoring technology to collect "big-data;" and,
- ***Government services***: Medical image-sharing (allows for service centralization), CCTV, Big data, Number Plate and Facial recognition, Secure electronic voting, Taxation and related FinTech innovations, Subsidy distribution, Frontline services, Remote learning tools.

Some of these services may in part be delivered over low or high bandwidth wireless services, but are expected to either require fiber-based backhaul from mobile masts or require that collected data is calibrated with data hosted in data centers or other physical locations connected by fiber. Future services can be expected to include higher bandwidth services.

As new services emerge to address a connected and ubiquitous set of user needs, networks will evolve in terms of both end-user equipment and operations. Although emerging wireless technologies will continue to support many end-users and applications, the global trend is towards fiber-based data transmission infrastructure and services and end-user speeds of 100 Mbps, 1 Gbps and above.

## 5.2. Portfolio of wholesale services

The important options for wholesale fiber services are:

- Diverse fiber routes between network interconnection and customer premises (resilient fiber service);
- Dedicated fiber between network interconnection and customer premises (direct fiber service); and,
- Capability to share fiber for technology such as GPON, through installation of optical splitters (shared PON service).

These are the passive services that enable the DTP services for the market segments. Services for DTPs addressing residential end-users included services using shared PON services for the following:

- A low-speed service that may be considered equivalent to a 50Mbps service today;
- A medium-speed service that may be considered equivalent to a 200Mbps service today; and,
- An ultrafast service that may be considered equivalent to a 1Gbps service today.

Relevant services to connect different business properties based on enhanced SLAs include:

- A connection for micro-enterprise with a few employees requiring 50Mbps;
- A connection for Small and Medium-sized Enterprises with up to 250 employees requiring 100Mbps for its employees, using direct fiber services;
- A connection for Large Corporates and some Government departments requiring a fiber connection that could be upgraded to carry large capacity requirements well in excess of 1Gbps for its core business activities using direct or resilient fiber services; and,
- A connection for Mobile Network Operators (MNOs) or Independent Tower Companies (ITCs) to tower sites, and for Data Center providers, using resilient fiber services, priced at a comparable level to Large Corporate and Government end-users, assuming a cost difference for deploying the required number of fibers to allow for carrier-grade resiliency, security and bandwidth growth requirements.

The bandwidth for these services is expected to grow, but average user spend is expected to remain stable for both fixed and wireless services. The International Telecommunication Union (ITU) estimates that average spend on ICT should not exceed 5% of disposable household income. It is expected that NCC will attract medium to high income residents in line with the NCC vision to become a developed, modern metropolis, so spending is expected to be higher than other parts of the Philippines. The same principle applies for larger bandwidth connections to BTS and data centers. BTS bandwidth is expected to increase as the need for backhaul grows in line with end-user wireless usage. Data center bandwidth will grow according to end-user residential, business and government demand for remotely stored and managed applications and content that will be hosted in data centers.

Ancillary fees can also be charged by the JV in return for services that relate to new installations, moves and changes (IMACs) resulting from new customer activation, migration, upgrade or deactivation services, as well as the space and on-costs related to housing necessary equipment to deliver these services. The detail of ancillary services may be simple for NCC, although some open access network providers with national footprints and/or legacy incumbent assets have developed extensive service pricing lists that specify day-rates for interventions by engineers and may price each jump cable between equipment. Only the co-location (space and power) in the MMR would be part of the core wholesale services, other additional services would be developed to meet DTP demand.

### 5.3. Determination of fair wholesale rates

The Philippines telecoms market is regulated by DICT in concert with the National Telecommunication Commission (NTC).

Fixed/broadband services are subject to oversight in terms of retail services to residential end-users and some smaller businesses. Broadband service rates are published and there are processes in place to protect consumers from anti-competitive behavior of data transmission infrastructure and services players with significant market power.

Wireless services and spectrum are subject to strong oversight and regulation. All MNOs have coverage and service level obligations. The Common Towers Policy outlines regulation and rules of engagement to support MNOs in ensuring ubiquitous coverage, cost-efficiency and minimum disruption to and clutter in the environment.

Retail services for fixed and mobile services and wholesale services relating to common towers are subject to regulation and there is also recourse to the Philippine Competition Commission (PCC) in the case of dispute.

However, there is no regulation in place at the time of writing to oversee the wholesale arrangements between DTPs and other parties. In the absence of national regulation, the rates for wholesale passive network services are subject to individual negotiation between data transmission providers on a case-by-case basis. In other markets, there is a trend to establish wholesale passive fixed network service regulation and it is expected that this may emerge in the Philippines.



## 6. Investment Assumptions

### 6.1. Network – Deployment approach and business model analysis

***Road infrastructure***

Network deployment should follow the NCC phased development, ensuring alignment of investment with market opportunity, and taking advantage of opportunities to share costs with or piggyback on other construction activities in NCC. In order to assure this close

alignment of investment and revenues, the study has considered a range of options for deployment.

In the business model analysis, the approaches identified to determine the costs for building conduits are:

- ***Greenfield:*** Undeveloped land, where all network construction should be completed as a joint build with the land developer, whether the BCDA or private.
- ***Joint Utility build***: Existing roads requiring provision of power and water utilities, where a joint utility project should implement all utilities under a single contract.
- ***Retrofit (full specification)***: Existing roads requiring data transmission infrastructure on an important network route. The passive data transmission conduit build, which should meet the agreed (full) network specification, as developed for the DSG, will be required alongside these existing roads, and will be led by the passive data transmission infrastructure and services JV.
- ***Retrofit (microducts)***: Existing roads requiring data transmission infrastructure for customer access, then a reduced build specification can be implemented using micro-trenching techniques to either connect the customers on demand or deploy enough infrastructure to connect all premises, and led by the passive data transmission infrastructure and services JV.
- ***Out of Scope***: Roads that are deemed out of scope for the JV include: access routes connected by existing private networks, deployed to serve SEA games or other customers; and, routes that run parallel to new roads and do not provide additional resilience or customer opportunities.

In completing the assessment of network capex, assumptions were made on the deployment approach, based on whether the road had been built and the type of road. For the assessment, roads were classed in three tiers as summarized below:

- ***Arterial***: Routes that connect NCC to developed areas outside NCC. Trunk routes tend to have limited customer opportunities and be served by a single duct that requires few break-out locations. There may be a future requirement to connect streetlights for mobile small cells, which can be connected through micro-ducts to the base of the streetlights, on demand or as part of a greenfield build.
- ***Collector***: The main arterial roads through NCC that will have locator plots on both sides of the road and are expected to be heavily trafficked. These routes will require the highest density of passive infrastructure, including duct routes on both sides of the road. The duct routes should have sufficient capacity for ducts to be allocated for transit /backhaul fibers and others for access to breakout to connect customers.
- ***Local:*** Distribution roads within NCC to reach locator plots and premises. The routes will require passive infrastructure on both sides of the roads and be focused on connecting customers rather than transit fiber cables.

Duct installations can be completed as discrete sections and extended at the right time to ensure build is aligned to demand.

Factors incorporated into the assessment model included:

- ***Road intersections:*** A cost uplift was required where installation needs to be completed to a higher specification, to meet the build standard for conduits under a highway.
- ***Customer opportunity:*** Where locator plots are on both sides of the road, conduits need to be built on both sides, thus doubling the duct length for those roads. A single duct route is recommended unless the route is out of scope due to no customer opportunity or resilience benefits being derived.
- ***Phasing***: The phasing within the assessment follows the four phases of the NCC development plan. The demand per phase has been updated to reflect lower than expected locator volumes due to the Covid-19 health pandemic.
- To reflect other Capex costs, two additional categories are introduced in the analysis:
    - Phase 0 represents an initial build requirement to retrofit existing roads and deliver the core connectivity of the network along strategic routes
    - Phase 1.5 represents built routes that could be deferred to align with demand. This includes trunk access roads, where demand is driven by customer resilience and small cell deployment.

### 6.2. Specifics of customer connection infrastructure – 'last-mile' connections

Customer connection infrastructure is a significant cost item that falls outside of the scope of the JV and is assumed to be borne by developers. The construction of the customer connection infrastructure or last mile needs to be completed in collaboration with the developer and may lag the completion of the network on trunk and urban roads. Once continuous duct is available, then the task of installing or blowing fiber from joint locations or the Meet Me Room to the building comms room is quick and non-intrusive and can be completed alongside the fit-out of building services.

Requirements for outside-plant conduit, fiber and supporting assets can be defined by the passive data transmission infrastructure and services JV. However, in-building and in-parcel requirements and specifications will vary. In-parcel implementation is therefore suited to be undertaken by the developer, who, along with the tenants, will be the direct beneficiary.

The passive data transmission infrastructure and services JV will provide a level of specification and advise on design, but final decisions would be taken by the developer. Some key parameters will need developer consideration. These are expanded upon in the following section regarding obligations that should be incorporated into land leases.

The key parameters should include:

- Provision of a comms room or Meet Me Room in the building, where external fiber cables can be terminated and patched to internal fibers. Different in-building specifications may be required to meet fire regulations;
- The developer is expected to extend fiber to every lettable unit and within common parts. These could be apartments, retail units, office block floors, or in some cases the whole building;
- The developer may limit the internal deployment to micro ducts and allow the JV to blow fiber. The pre-requisite is that this deployment complies with standards relating to distances, heights/drops and bend radius, to ensure fiber can be blown in when required;
- The installed fiber must be accessible to all DTPs through the JV, and enable DTPs to deliver services without additional constraints, conditions or charges imposed by the developer; and,
- Mobile network in-building solutions would be designed by MNOs, but rely on access to fiber. To enhance resilience, their solutions may require separate fibers from those used by DTPs for tenants, in both lettable units and common parts.

Towers for MNOs also need to be considered. Whether deployed on rooftops or land, the principles are comparable to other building structures. Towers are expected to be deployed by Independent Tower Companies (ITCs), which can be considered equivalent to developers, and have MNOs as tenants. The JV will be responsible for the fiber to the tower, while the MNOs will follow normal practice to acquire sites and engage ITCs.

### 6.3. Non-Network

Although the JV is leasing out optical fiber to DTPs, this is not a simple property transaction. The JV will be required to provide a managed service, that covers not just provision, but also repair and maintenance to an agreed SLA. The SLAs will be relied upon by DTPs as part of the end customer service offer. To achieve the service, the JV will need to adopt many of the systems and operational functions of telcos, including:

- Network Management Systems (NMS);
- Operational Support Systems (OSS); and,
- Business Support Systems (BSS)

These will need to be made available at contract commencement and maintained throughout the duration of any concession or contract, with technology refresh at regular periods.

#### 6.3.1. Market size and market segments

The overarching calculation methodology for revenues is driven by end-user connections. While the target end-users are residents or employees in the NCC footprint, it is the number of endpoints in terms of homes and business offices that drives revenues, so the

assessment includes an estimate of the size of households and businesses based on the BCDA's data. For the purpose of revenue generation, a billable entity will need an address with pre-installed duct, fiber and network termination point.

The number of people and businesses that will generate end-user demand for data transmission services across NCC has been assessed by the BCDA in close partnership with its primary land developers. The NCC Masterplan identifies four phases of proposed development. The phases include estimates of the number of people located in the NCC footprint by day-time and by night-time, reflecting respectively the total number of employees and the total number of residents in the NCC area.

In light of the health pandemic, the initial forecasts of the NCC Masterplan were revised downwards for the short-term. These figures have been correlated with current levels of occupancy of NCC and with the expected real estate development which is a necessary precursor to end-users occupying property and paying for data transmission services. These revisions have not affected the end goal for NCC.

The passive data transmission infrastructure and services are dependent on the number of endpoints that can be connected by fiber, which has been derived by assuming the number of people in an average household size (4.2) and an average number of employees per business (94.1). The resulting market based on the number of endpoints is shown in **Table 1**.

**Table 1: Summary of estimated user endpoints**

| Target addressable market | 2025 | 2028 | 2038 | 2048 |
|---|---|---|---|---|
| Located residential population | 13,949 | 53,847 | 364,484 | 621,336 |
| TAM: All Homes | 3,321 | 12,821 | 86,782 | 147,937 |
| TAM : Low Spend Homes | 2,823 | 10,898 | 73,765 | 125,747 |
| TAM : High Spend Homes | 498 | 1,923 | 13,017 | 22,191 |
| Located employees | 34,497 | 136,036 | 166,805 | 208,595 |
| TAM: All Enterprises (incl. Gov't | 377 | 1,486 | 1,822 | 2,279 |
| TAM : Micro-Enterprise | 314 | 1,237 | 1,516 | 1,896 |
| TAM : SME | 55 | 218 | 267 | 334 |
| TAM : Large Corp / Govt | 8 | 32 | 39 | 49 |

Each of these endpoints is only connected to active services once a DTP has paid for the fiber connection from the passive data transmission infrastructure and services JV and connected the end-user location to a CPE (Customer Premises Equipment e.g. a modem or route) and the Meet-Me Room location through an active line card on the DTP's active network.

The passive data transmission infrastructure and services JV will also service the requirements of data centers, service integrators in commercial property, and MNOs for backhaul to mobile base stations that may be placed on roof-tops or towers, and for the construction of which ITCs may be engaged.

### 6.3.2. Service product portfolio

For every end location that a DTP connects to a service (e.g. home, office, base station, small cell, large data center), the portfolio of services is broken into three main components:

- lease of the fiber connection;
- connection in the Meet-Me Room; and,
- space and services in the Meet-Me Room and Network Management Center.

These services may be taken for specific lease terms and fees are charged driven by the term, the capacity of fiber and related SLAs, in which revenues paid to the JV by a DTP are driven by the following items:

- Monthly rental fee which may be bundled for a longer period;
- One-time connection fee, related to connecting services in the Meet-Me Room; and,
- Some further charges that relate to ancillary services, such as checking the line prior to service activation and other services during the life of the end-user contract.

ANNEX A

# New Clark City

## Land Use Distribution

The Master Plan for NCC provides a broad land use framework to guide its development. Whilst plans for NCC Phase One have been detailed, the latter phases will be subject to supplements and/ or amendments, reflecting changing circumstances.

**Residential Zone**

- R1 - Low Density Residential Zone
- R4 - Mixed Use Residential Zone
- R2 - Medium Density Residential Zone
- R3 - High Density Residential Zone

**Commercial Zone**

- C1 - Neighborhood Level Commercial Zone
- C2 - City Level Commercial Zone
- C3 - Central Business Zone
- T - TOD Zone

**Parks and Recreational Zone**

- P1 - Passive Recreational Zone
- P2A - Active Recreational Zone
- P2B - Active Recreational Zone (SEA Games)
- P3 - Protected Zone

**Civic and Institutional Zone**

- G - Civic and Institutional Zone
- E - Education Zone

**Industrial Zone**

- I1 - Research and Development Zone
- I2 - Light Industrial Zone
- I3 - General Industrial Zone

**Other Zones**

- W - Reserved Zone
- IN - Infrastructure Zone
- IN-C - Common Infrastructure Area
- Rd - Road Right of Way
- uROW - Utilities Right of Way
- Ex - Excluded Areas

BCDA
Bases Conversion and Development Authority

# New Clark City

FAR Distribution per Land Use

**ANNEX B**

| Land Use | | | FAR |
|---|---|---|---|
| **Commercial Zone** | | | |
| | C1 | Neighborhood Level Commercial | 2.0 |
| | C2 | City Level Commercial | 3.0 |
| | C3 | Central Business Zone | 4.0 |
| | T | TOD Zone | 4.0 |
| **Residential Zone** | | | |
| | R1 | Low Density Residential Zone | 0.8 |
| | R2 | Medium Density Residential Zone | 1.5 |
| | R3 | High Density Residential Zone | 3.0 |
| | R4 | Mixed Use Residential Zone | 4.0 |
| **Civic Zone** | | | |
| | G | Government and Institutional Zone | 2.0 |
| | E | Education Zone | 1.0 |

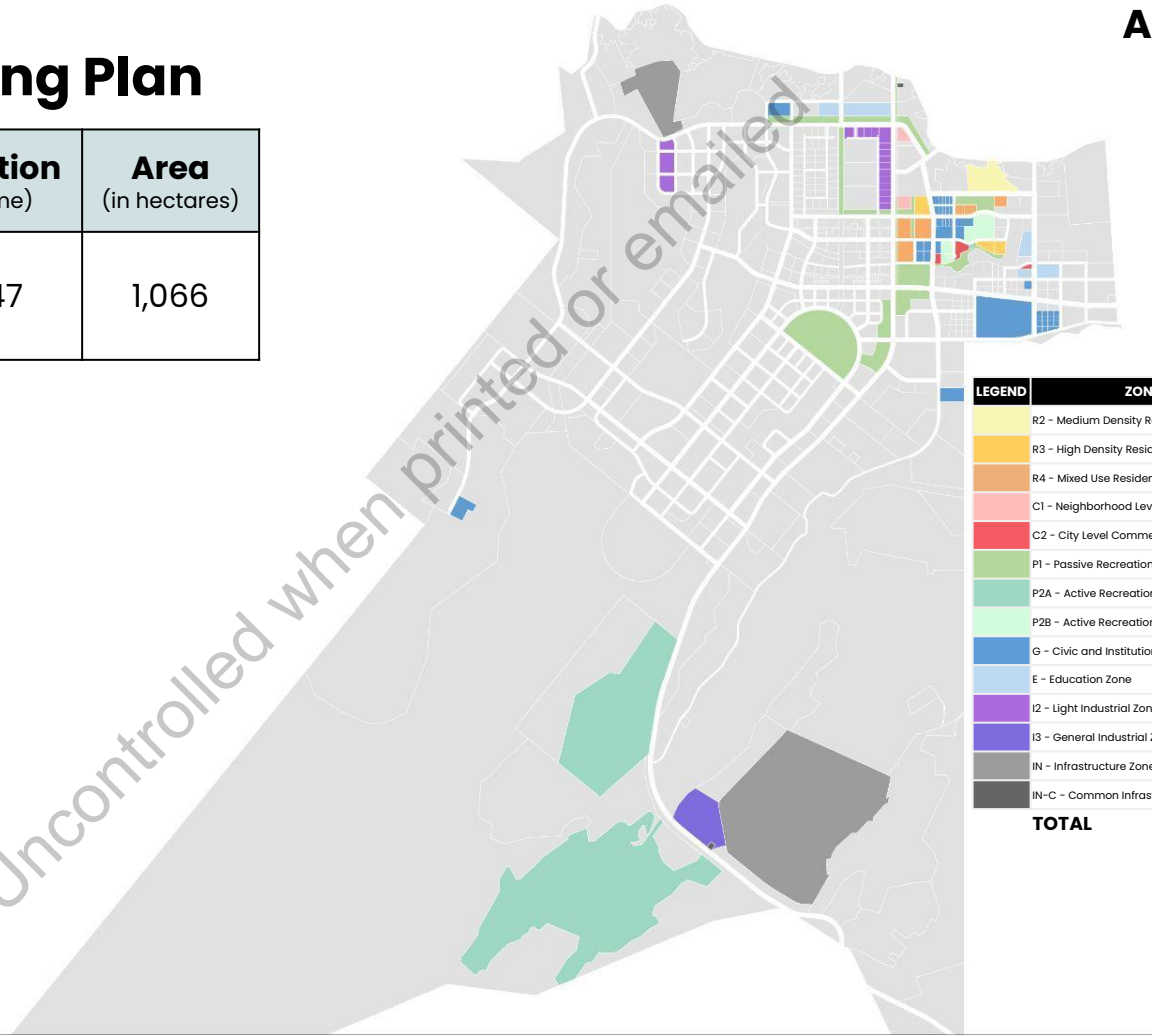
| Land Use | | | FAR |
|---|---|---|---|
| **Industrial Zone** | | | |
| | I1 | Research & Development Zone | 3.0 |
| | I2 | Light Industrial Zone | 0.5 |
| | I3 | General Industrial Zone | 0.4 |
| **Parks & Open Spaces** | | | |
| | P1 | Passive Recreational Zone | 0.0 |
| | P2A | Active Recreational Zone | 0.2 |
| | P2B | Active Recreational Zone (SEA Games) | 2.0 |
| | P3 | Protected Zone | 0.0 |
| **Utilities, Transport & Infrastructure Zone** | | | |
| | IC/IN | Infrastructure Zone | 0.0 |
| | Rd | Road ROW | 0.0 |
| **Others** | | | |
| | W | Reserved Zone | 0.0 |
| | Ex | Excluded Area | 0.0 |

ANNEX C

# NCC Adjusted Phasing Plan

| Phase | Population (Daytime) | Population (Nighttime) | Area (in hectares) |
|---|---|---|---|
| Phase 1 (~2028) | 136,036 | 53,847 | 1,066 |





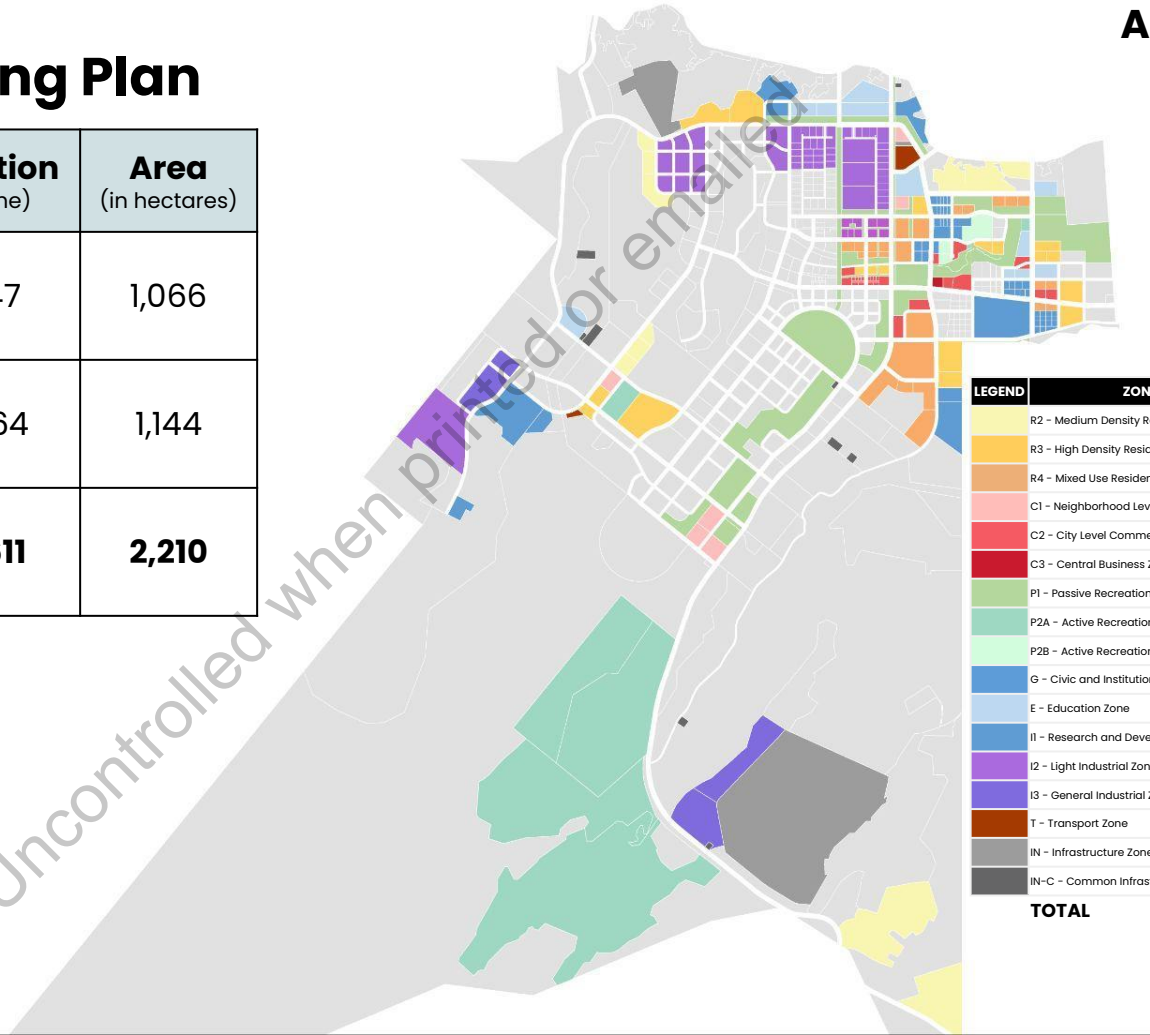
| LEGEND | ZONING | AREA |
|---|---|---|
| | R2 - Medium Density Residential Zone | 15 |
| | R3 - High Density Residential Zone | 8 |
| | R4 - Mixed Use Residential Zone | 19 |
| | C1 - Neighborhood Level Commercial Zone | 6 |
| | C2 - City Level Commercial Zone | 4 |
| | P1 - Passive Recreational Zone | 119 |
| | P2A - Active Recreational Zone | 430 |
| | P2B - Active Recreational Zone (SEA Games) | 13 |
| | G - Civic and Institutional Zone | 71 |
| | E - Education Zone | 24 |
| | I2 - Light Industrial Zone | 29 |
| | I3 - General Industrial Zone | 28 |
| | IN - Infrastructure Zone | 299 |
| | IN-C - Common Infrastructure Area | 1 |
| | **TOTAL** | **1,066** |

ANNEX C

# NCC Adjusted Phasing Plan

| Phase | Population (Daytime) | Population (Nighttime) | Area (in hectares) |
|---|---|---|---|
| Phase 1 (~2028) | 136,036 | 53,847 | 1,066 |
| Phase 2 (2029-2040) | 224,124 | 372,764 | 1,144 |
| **Total by 2040** | **360,160** | **426,611** | **2,210** |



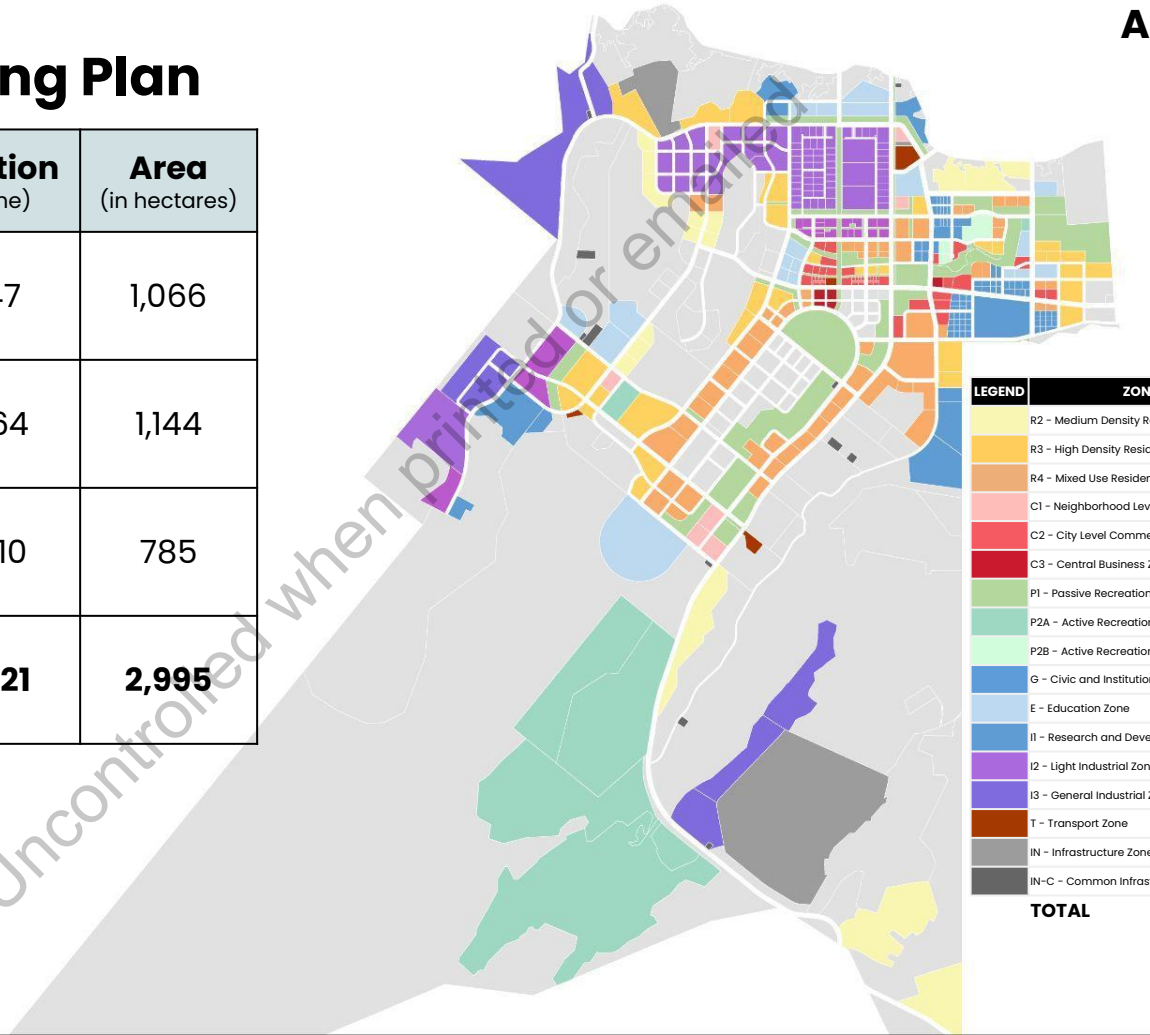


| LEGEND | ZONING | AREA |
|---|---|---|
| | R2 - Medium Density Residential Zone | 168 |
| | R3 - High Density Residential Zone | 101 |
| | R4 - Mixed Use Residential Zone | 97 |
| | C1 - Neighborhood Level Commercial Zone | 26 |
| | C2 - City Level Commercial Zone | 28 |
| | C3 - Central Business Zone | 2 |
| | P1 - Passive Recreational Zone | 286 |
| | P2A - Active Recreational Zone | 699 |
| | P2B - Active Recreational Zone (SEA Games) | 13 |
| | G - Civic and Institutional Zone | 112 |
| | E - Education Zone | 65 |
| | I1 - Research and Development Zone | 45 |
| | I2 - Light Industrial Zone | 170 |
| | I3 - General Industrial Zone | 80 |
| | T - Transport Zone | 8 |
| | IN - Infrastructure Zone | 299 |
| | IN-C - Common Infrastructure Area | 11 |
| | **TOTAL** | **2,210** |

ANNEX C

# NCC Adjusted Phasing Plan

| Phase | Population (Daytime) | Population (Nighttime) | Area (in hectares) |
|---|---|---|---|
| Phase 1 (~2028) | 136,036 | 53,847 | 1,066 |
| Phase 2 (2029-2040) | 224,124 | 372,764 | 1,144 |
| Phase 3 (2041-2050) | 271,532 | 429,010 | 785 |
| **Total by 2050** | **631,692** | **855,621** | **2,995** |



| LEGEND | ZONING | AREA |
|---|---|---|
| | R2 - Medium Density Residential Zone | 219 |
| | R3 - High Density Residential Zone | 203 |
| | R4 - Mixed Use Residential Zone | 237 |
| | C1 - Neighborhood Level Commercial Zone | 30 |
| | C2 - City Level Commercial Zone | 47 |
| | C3 - Central Business Zone | 6 |
| | P1 - Passive Recreational Zone | 316 |
| | P2A - Active Recreational Zone | 699 |
| | P2B - Active Recreational Zone (SEA Games) | 13 |
| | G - Civic and Institutional Zone | 191 |
| | E - Education Zone | 174 |
| | I1 - Research and Development Zone | 65 |
| | I2 - Light Industrial Zone | 222 |
| | I3 - General Industrial Zone | 250 |
| | T - Transport Zone | 13 |
| | IN - Infrastructure Zone | 299 |
| | IN-C - Common Infrastructure Area | 11 |
| | **TOTAL** | **2,995** |

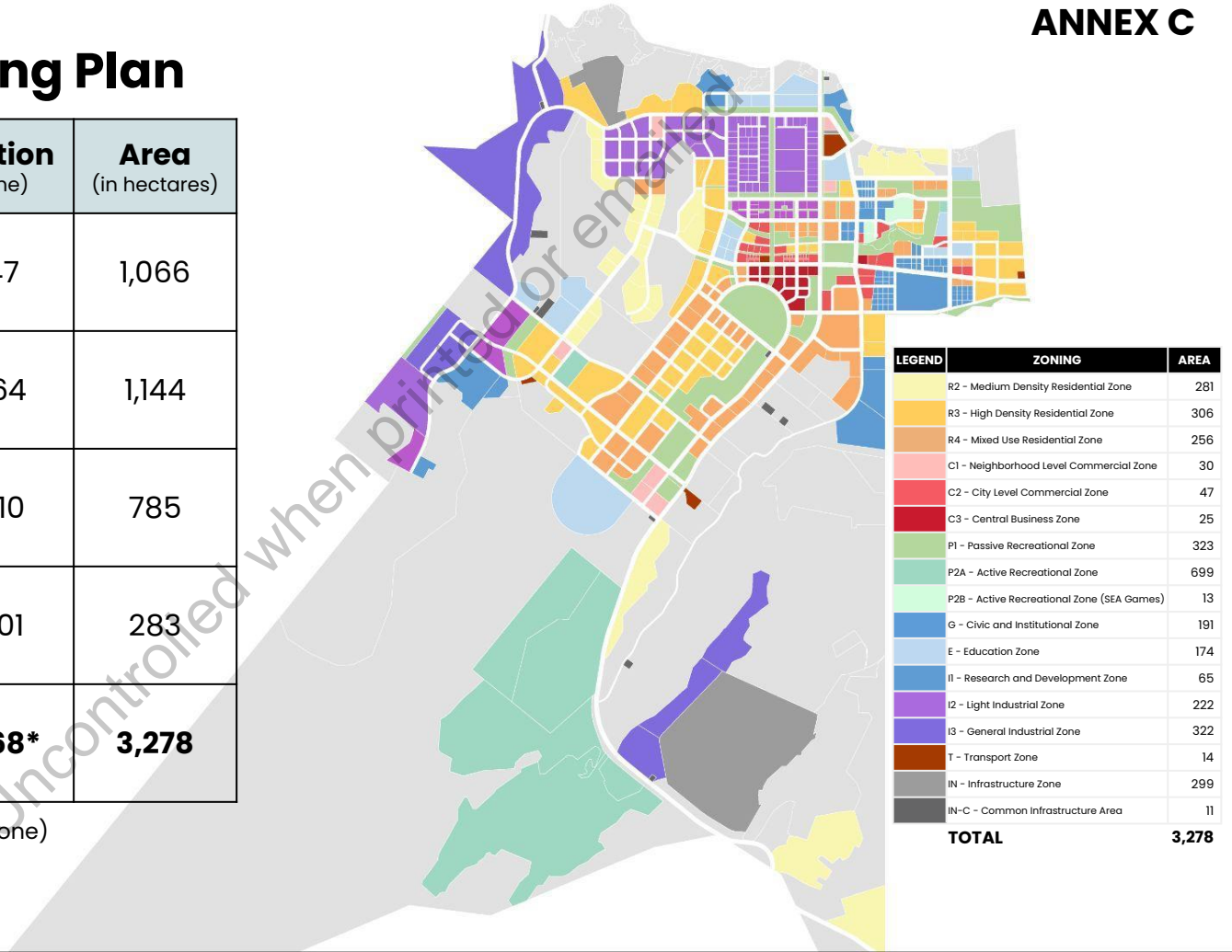
ANNEX C

# NCC Adjusted Phasing Plan

| Phase | Population (Daytime) | Population (Nighttime) | Area (in hectares) |
|---|---|---|---|
| Phase 1 (~2028) | 136,036 | 53,847 | 1,066 |
| Phase 2 (2029-2040) | 224,124 | 372,764 | 1,144 |
| Phase 3 (2041-2050) | 271,532 | 429,010 | 785 |
| Phase 4 (2051-2065) | 66,627 | 228,001 | 283 |
| **Total by 2065** | **698,319** | **1,117,668*** | **3,278** |

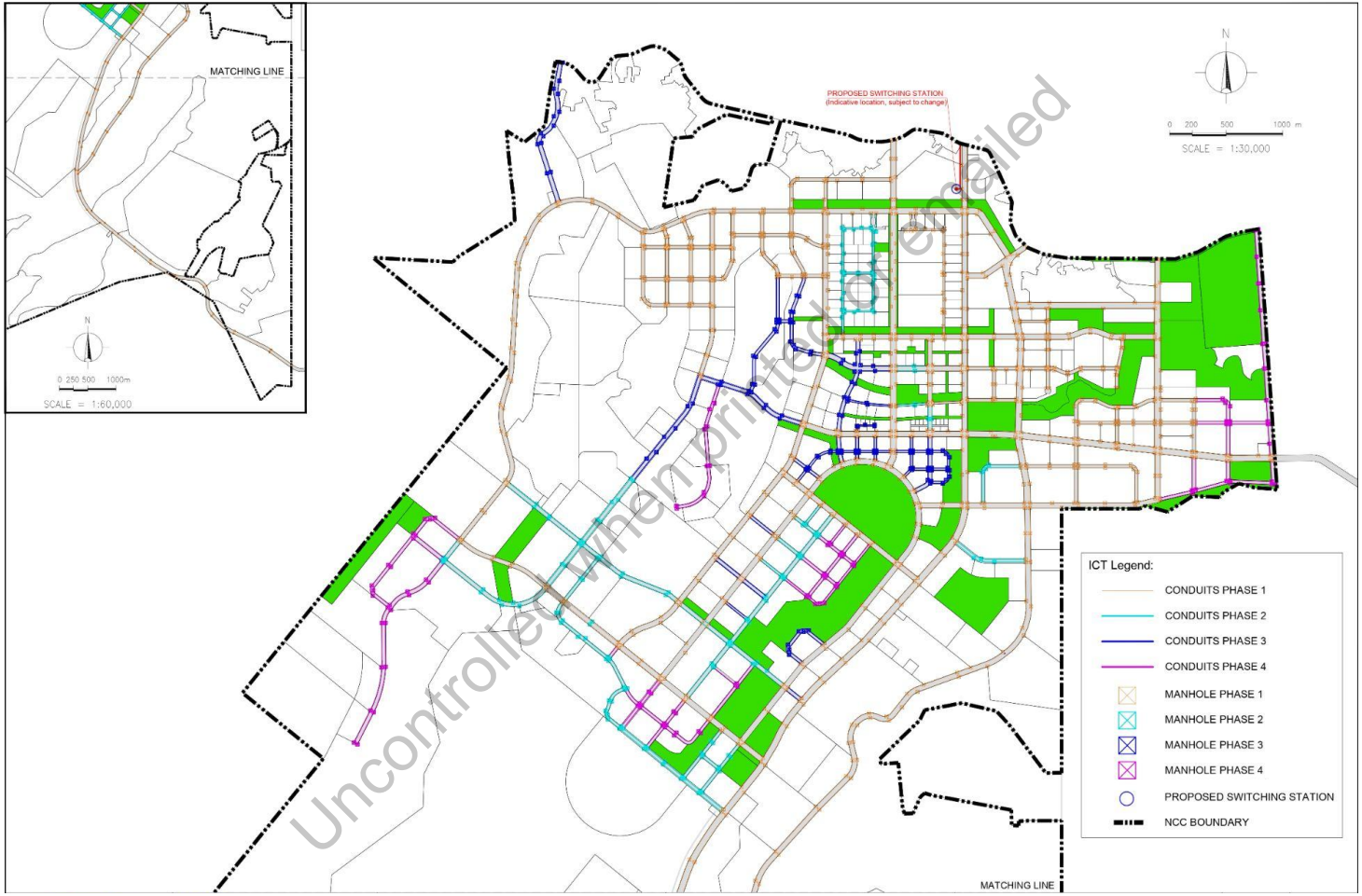
*Includes 34,046 population from R1 (Buffer Zone)





| LEGEND | ZONING | AREA |
|---|---|---|
| | R2 - Medium Density Residential Zone | 281 |
| | R3 - High Density Residential Zone | 306 |
| | R4 - Mixed Use Residential Zone | 256 |
| | C1 - Neighborhood Level Commercial Zone | 30 |
| | C2 - City Level Commercial Zone | 47 |
| | C3 - Central Business Zone | 25 |
| | P1 - Passive Recreational Zone | 323 |
| | P2A - Active Recreational Zone | 699 |
| | P2B - Active Recreational Zone (SEA Games) | 13 |
| | G - Civic and Institutional Zone | 191 |
| | E - Education Zone | 174 |
| | I1 - Research and Development Zone | 65 |
| | I2 - Light Industrial Zone | 222 |
| | I3 - General Industrial Zone | 322 |
| | T - Transport Zone | 14 |
| | IN - Infrastructure Zone | 299 |
| | IN-C - Common Infrastructure Area | 11 |
| | **TOTAL** | **3,278** |

# ANNEX D

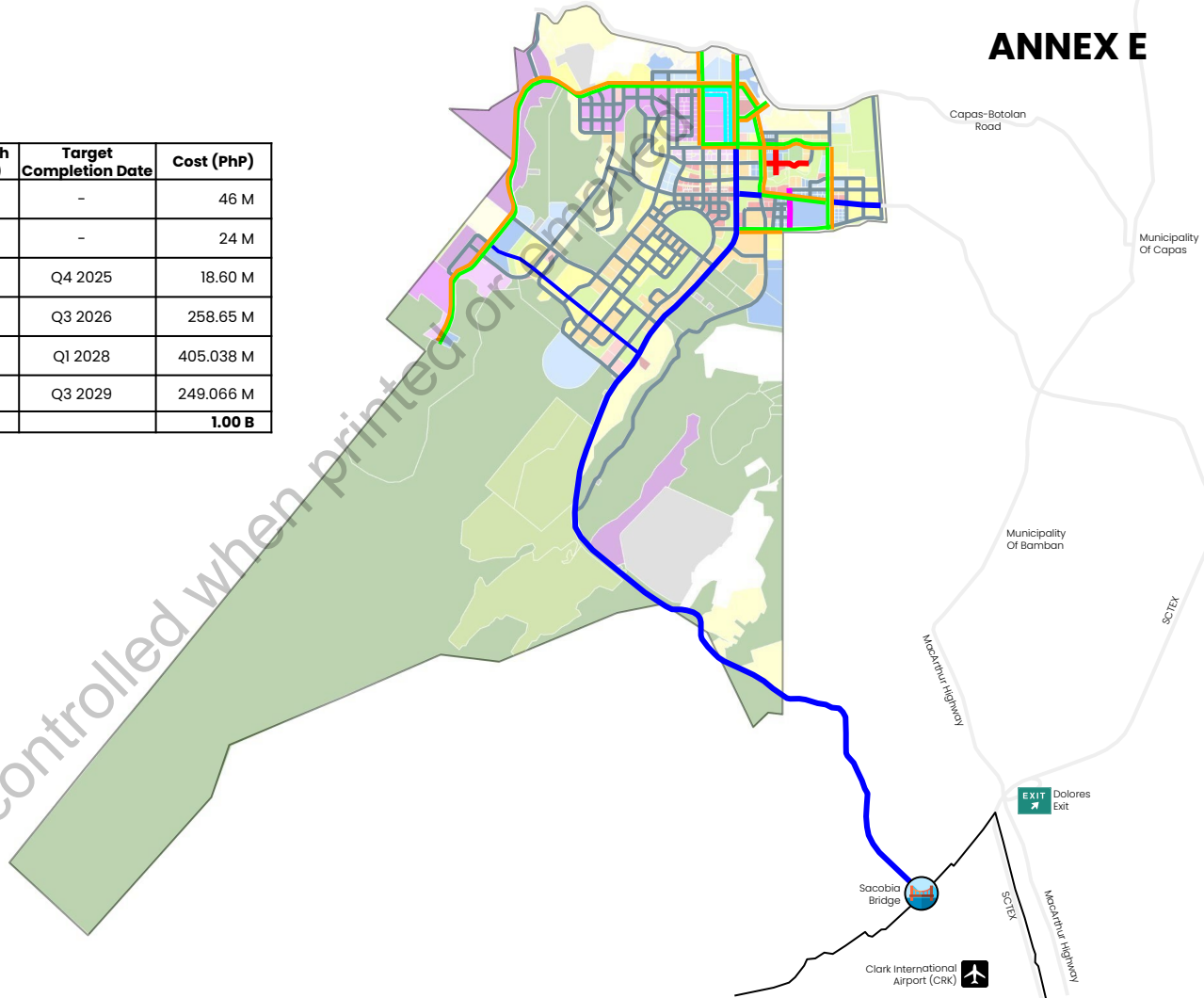


# New Clark City

ICT Corridor

ANNEX E

| Particulars | Status | Length (KM) | Target Completion Date | Cost (PhP) |
|---|---|---|---|---|
| NCC ICT @ NGAC (both side) | Completed | 2.3 | - | 46 M |
| NCC ICT @ FLI (both side) | Completed | 2.5 | - | 24 M |
| NCC ICT BSP West Road (both side underground) | Ongoing | 1.46 | Q4 2025 | 18.60 M |
| NCC ICT Phase 1 (right side underground) | For Award | 22.616 | Q3 2026 | 258.65 M |
| NCC ICT Phase 2 (both side underground) | For Future Development | 35.416 | Q1 2028 | 405.038 M |
| NCC ICT Phase 3 (left side underground) | For Future Development | 21.778 | Q3 2029 | 249.066 M |
| **Total** | | **86.07** | | **1.00 B** |



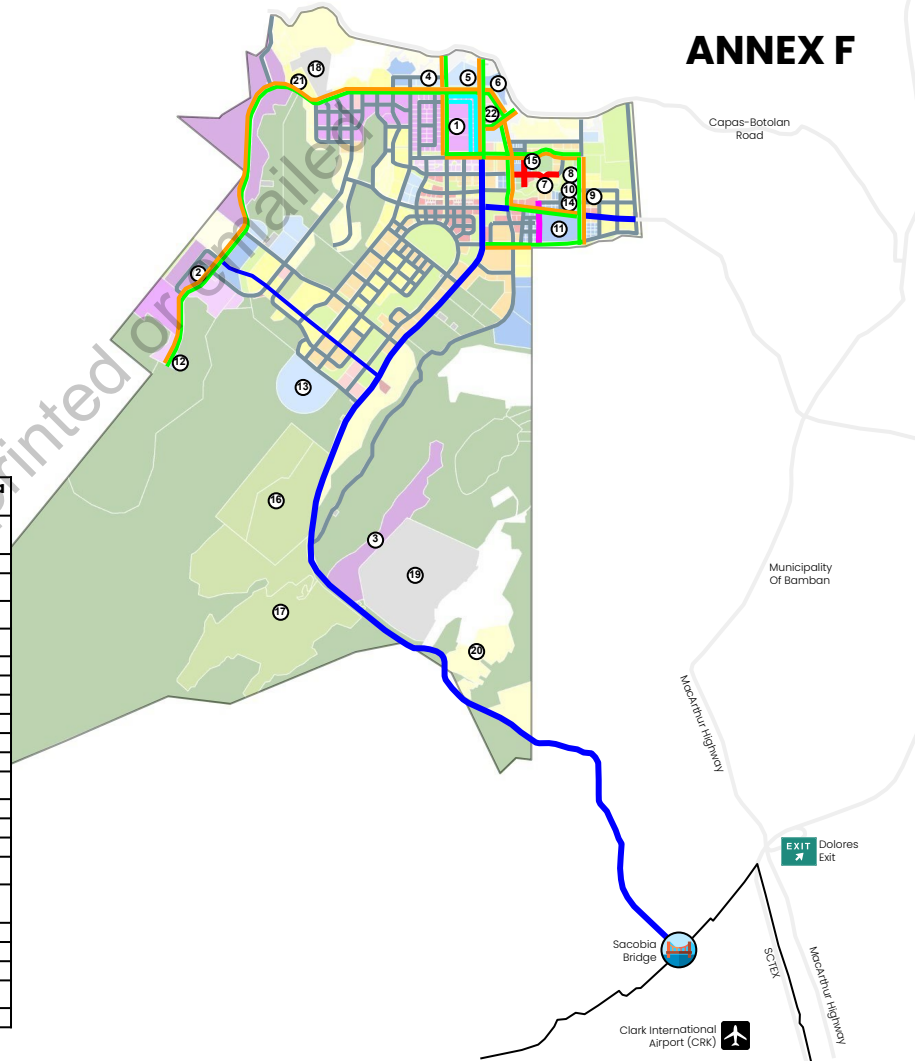
# New Clark City

## ICT Corridor

**ANNEX F**

| Particulars | Status | Length (KM) | Target Completion Date | Cost (PhP) |
|---|---|---|---|---|
| NCC ICT @ NGAC (both side) | Completed | 2.3 | - | 46 M |
| NCC ICT @ FLI (both side) | Completed | 2.5 | - | 24 M |
| NCC ICT BSP West Road (both side underground) | Ongoing | 1.46 | | 18.60 M |
| NCC ICT Phase 1 (right side underground) | For Award | 22.616 | | 258.65 M |
| NCC ICT Phase 2 (both side underground) | For Future Development | 35.416 | | 405.038 M |
| NCC ICT Phase 3 (left side underground) | For Future Development | 21.778 | | 249.066 M |
| | **Total** | **86.07** | | **1.00 B** |

| Land Use | | Locator | Status | Land Area (Has) |
|---|---|---|---|---|
| **Industrial** | 1 | Filinvest Mixed Use & Industrial Development | Operational | 288.0 |
| | 2 | Hyperscale Data Center | Construction to start on Q4 2025 | 47.0 |
| | 3 | Science Park of the Philippines | Construction to start on Q4 2025 | 100.0 |
| **Institutional** | 4 | Polytechnic University of the Philippines | Design Stage | 7.5 |
| | 5 | Technological University of the Philippines | Design Stage | 20.8 |
| | 6 | Office of Civil Defense | Design Stage | 10.0 |
| | 7 | NGAC Phase 1A | Operational | 40.0 |
| | 8 | National Academy of Sports | Operational | 5.9 |
| | 9 | UP Satellite Campus | Ongoing construction | 3.8 |
| | 10 | PH Science High School | Ongoing construction | 4.8 |
| | 11 | BSP Complex | Construction to start on Q4 2025 | 31.3 |
| | 12 | Virology Institute of the Philippines | Ongoing construction | 5.0 |
| | 13 | UP Main Campus | Design Stage | 70.0 |
| | 14 | Philippine Space Agency HQ | Design Stage | 1.0 |
| | 15 | UP-PGH Polyclinic | Operational | 2.0 |
| **Recreation/ Parks** | 16 | Sky Blue NCC Golf Course & Resort | Ongoing construction | 250.0 |
| | 17 | Hann Luxury Mountain Reserve | Ongoing construction, First Golf Course operational by Q4 2025 | 450.0 |
| **Infrastructure** | 18 | Sindicatum Solar Farm | Pre-Construction Phase | 38.0 |
| | 19 | Sunray Solar Farm | Pre-Construction Phase | 260.0 |
| **Residential** | 20 | PAF Housing | Site Development Phase | 65.0 |
| | 21 | Capas Housing Site | Pre-Construction Phase | 6.1 |
| **Commercial** | 22 | Double 11 Service Station | Construction to start on Q4 2025 | 1.0 |

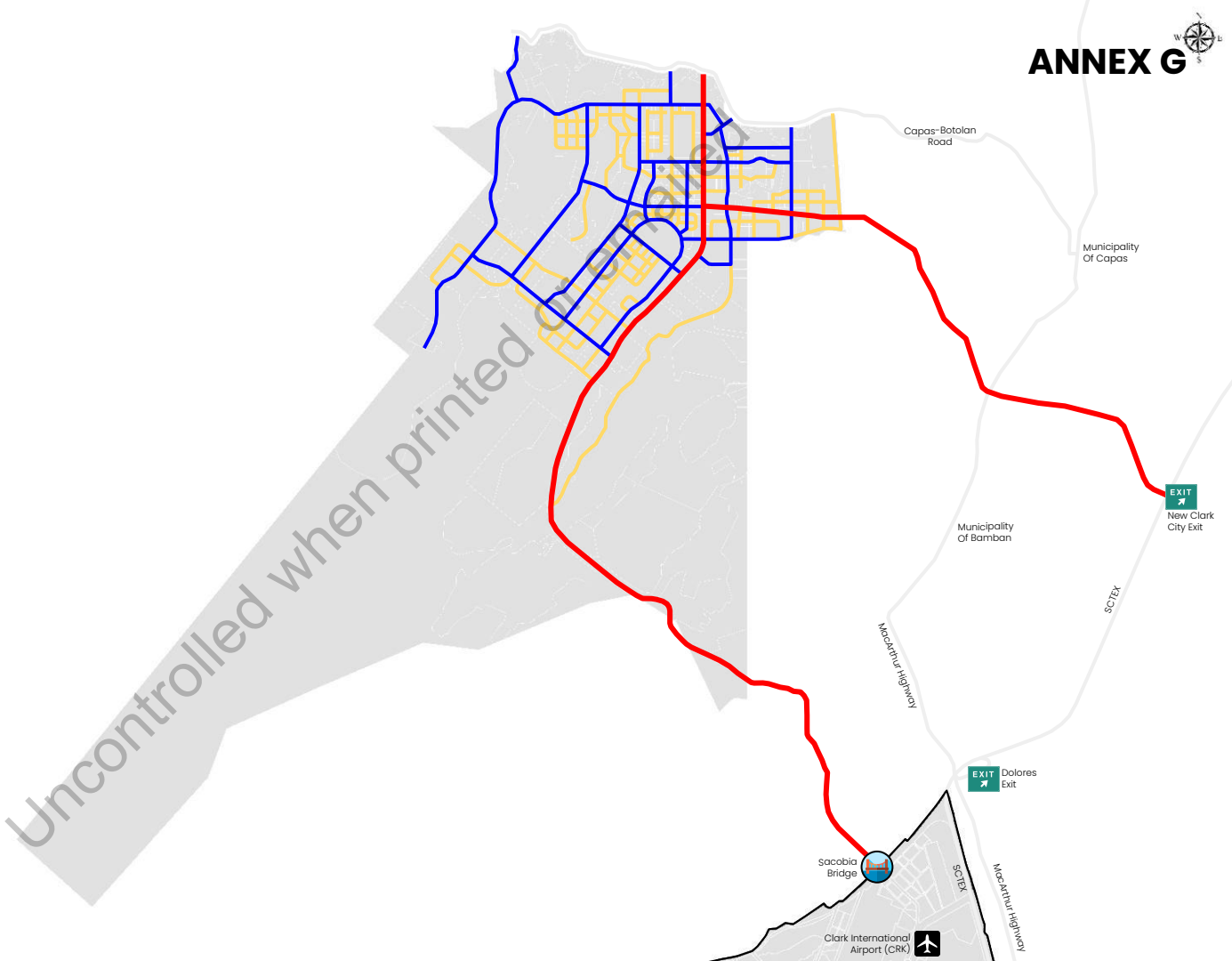


# NCC Roads

**Arterial Road**

**Collector Road**

**Local Road**



# ANNEX 2

New Clark City (NCC) Information and Communications Technology (ICT) Passive Infrastructure Project

# Minimum Performance Standards and Specifications (MPSS)

## 1. INTRODUCTION

The MPSS is subsidiary to planning documents produced by BCDA to guide the development of NCC. Where the MPSS establishes a more stringent performance standard than an NCC-wide document, the MPSS should be followed. In any other case of apparent conflict or ambiguity, the NCC-wide document established for NCC will prevail.

This MPSS sets out the minimum performance or functional standards and specifications that the JV shall (and the JV Partner procure that the JV shall) comply with in undertaking to dispose of the BCDA's passive ICT infrastructure. To dispose of BCDA's passive ICT infrastructure while maximizing its value, the scope of work for the JV as set out under this MPSS shall include commercialization, and as necessary, expansion of the passive ICT infrastructure in line with the aforementioned BCDA vision and in accordance with the provisions of the JVA.

Capitalized terms used in this MPSS that are not defined shall have the same meaning as the JVA.

## 2. MPSS

The following tables summarize the MPSS that must be achieved by the JV (through the JV Partner), where further information is provided in the subsequent sections. Any Condition Subsequent Documents that are listed in Schedule 6 in the Annexes and Schedules of the Instructions to Bidders shall be documentary requirements for JV partner to be able to deliver and meet the MPSS. The Condition Subsequent Documents shall comprise the MPSS even if they may not be mentioned under the specific section of the MPSS.

**Table 1: Summary of MPSS**

| A. Design and Construction | B. Repair and Maintenance | C. Commercialization | D. Organization | E. KPIs |
|---|---|---|---|---|
| A1a. Designed and constructed to support long-term ICT services for Lessees – layout/dimension | B1. High-performing infrastructure | C1. Clear process for connecting customers | D1i. Key personnel – CEO | E1. Monthly Service Availability |
| A1b. Designed and constructed to support long-term ICT services for Lessees – capacity | B2. Customer Service - Network management capability offering a single point of contact for Lessees' fault management | C2. MMR Interconnection Service to integrate Lessees | D1ii. Key personnel - CTO | E2. Monthly Service Credits |
| A2. Fiber connections to all lettable units - MMR | B3. GIS-based record of infrastructure assets and electronic record of Fiber assets | C3. Service Level Agreements | D1iii. Key personnel - CFO | E3. Developer Service Credits |
| A3. Availability of differentiated Fiber Services | B4. Records accessible to protect and manage infrastructure | C4. Customer Service - Lessee Account Management | D1iv. Key personnel - Head of Legal and Regulatory | |
| A4. Underground installation of conduits and Fiber | | | D1v. Key personnel - Head of Network Management | |
| A5. Use of high-grade optical Fiber | | | D1vi. Key personnel - Head of Delivery | |

| A. Design and Construction | B. Repair and Maintenance | C. Commercialization | D. Organization | E. KPIs |
|---|---|---|---|---|
| | | | and Service Provision | |
| A6. Ready for Mobile Network Operators and Smart City | | | D1vii. Key personnel - Head of Sales and Marketing | |
| A7. Design Standards & Guidelines for Civil Works | | | D2. Published Complaints and Grievance Procedure | |
| A8. Design Standards & Guidelines for Real Estate developers | | | D3. Submission of implementation plans | |
| A9. Compliance with national standards | | | | |

## A. DESIGN AND CONSTRUCTION

### Table 2: Design and Construction: Overview of MPSS

| MPSS | Minimum requirement overview |
|---|---|
| **A1a. Designed and constructed to support long-term ICT services for Lessees – layout/dimension** | The JV shall ensure that the infrastructure and fiber optic network design deliver the MCSR throughout the Service Area for the asset life of the passive infrastructure. This shall include Meet-Me Room facilities for the MCSR co-location service and interconnection between JV and Lessee(s) fiber and between Lessee(s) |
| **A1b. Designed and constructed to support long-term ICT services for Lessees – capacity** | The JV shall ensure that it estimates the capacity and demand in a comprehensive manner and factor the potential increase in demand while developing the approach to satisfy the demand. The location and capacity of the Meet-Me Room(s) and the underground ducting requirement study must be justified vis-à-vis the demand and capacity projections. The impact of technology must also be considered on demand and capacity. |
| **A2. Fiber connections to all lettable units** | The JV shall ensure that the fiber optic design connects every lettable unit, and presents availability for two concurrent connectivity services within the same MCSR category within each unit |
| **A3. Availability of differentiated Fiber Services** | The JV shall ensure that the fiber optic design presents a Resilient Fiber Service to every non-residential premises or multi-dwelling unit |
| **A4. Underground installation of conduits and fiber** | The JV shall install all fiber optic cables within buried conduits that align with MCSR objectives for resilience, dimensions and provisions. Supporting documentation to be part of A7 |
| **A5. Use of high-grade optical fiber** | The JV shall deploy ITU-T G.652D standard for outdoor installations and the ITU-T G.657A standard for in-building installations |
| **A6. Ready for Mobile Network Operators and Smart City** | The JV shall ensure that the fiber optic design has provision for typical and non-typical connection points for building and for non-building technology usage for both Mobile operators and Smart City initiatives |
| **A7. Design Standards & Guidelines for Civil Works** | The JV shall publish Design Standards and Guidelines (DSG) for outside plant installation of passive infrastructure to enable consistent infrastructure development across NCC, irrespective of land ownership and/or tenure |
| **A8. Design Standards & Guidelines for Real Estate developers** | The JV shall publish DSG (including list and technical specifications of recommended components) for in-building of passive infrastructure to enable consistent infrastructure development across NCC, irrespective of land ownership and/or tenure |
| **A9. Compliance with national standards** | The JV shall ensure that all infrastructure, assets and services comply with national Philippine standards and Prudent Industry Practice. |

**A1a. Designed and constructed to support long-term ICT services for Lessees – Layout / Dimension**

The JV shall create and maintain a high-level infrastructure design that (i) delivers resilience for JV Product Types and (ii) dimensions the infrastructure to meet foreseeable demand for the asset life and any reasonably foreseeable requirements for NCC to be a leading Smart City in Asia.

ICT infrastructure shall be provided across public and private land in NCC, although the JV may expect that developers will install infrastructure within their leased land and buildings during construction, to meet the requirements of the DSG. Such infrastructure should be made available exclusively to the JV to deliver the JV Product Types.

The JV shall ensure that its design, construction and dimensions of the infrastructure meet foreseeable demand for the asset life to include at minimum:

- Support for four different DTPs,
- Two (2) distinct and resilient routes for fiber optics from each DTP exchange to each MMR to Lessees,
- Minimum Connectivity Services Requirement offering.

The JV shall provide one or more Meet-Me Rooms (MMR) with co-location facilities and interconnection services, to enable Lessees to:

- Install and operate active equipment for retail service delivery;
- Terminate the DTP backhaul fiber;
- Deliver backhaul services to non-infrastructure owning Lessees;
- Interconnection between the JV fiber used for JV Product Types and the Lessees' equipment; and,
- Interconnection between different Lessees equipment.

During the term of this Agreement, the MMR facilities shall be developed and expanded to meet required capacity and deliver DTP resilience and redundancy.

BCDA will make land available for the MMR in areas that have not been designated for commercial development.

***Within ninety (90) days from the Commencement Date,*** the JV must allow scope for reasonably foreseeable requirements that will establish NCC as a leading Smart City in Asia with detailed schematics provided in category A6 and also provide justification for location of maintenance access.

**A1b. Designed and constructed to support long-term ICT services for Lessees - Capacity**

The JV network design must provide sufficient capacity to meet reasonably foreseeable demand, for relevant customer types, throughout the development of NCC, both during the term of this Agreement and for the foreseeable asset life in line with published BCDA plans.

***Within ninety (90) days from the Commencement Date,*** as part of the initial Implementation Plan, the JV shall provide details on the following:

- Capacity forecasts by road types over the JV Term;
- Demand forecast by road types over the JV Term;
- Justification for capacity assumptions;

- Justification for demand assumptions;
- Justification for MMR locations; and,
- Justification for underground ducting requirements

Additional capacity for growth of fiber demand and resilience should be incorporated within the conduit design to meet reasonably foreseeable industry developments, an enhanced population growth throughout the asset life, and advance in technology. The location and capacity of the Meet-Me Room(s) and the underground ducting requirement study must be justified vis-à-vis the demand and capacity projections.

During the term of this Agreement, the MMR facilities shall be developed and expanded to meet required capacity and deliver DTP resilience and redundancy.

## A2. Fiber connections to all lettable units

The JV shall design and construct ICT infrastructure within NCC to enable the provision of the MCSR at every potential lettable customer location, including but not limited to apartments, landed property, retail units, offices, industrial and commercial buildings, sub-units and other customer demand locations, including but not limited to street furniture and other non-building access points (as further described at A6) throughout the term of this Agreement.

The JV shall ensure:
- MMR approach to a high-level optical Fiber design, supports FTTx from DTPs;
- On-site fiber management is undertaken in locator premises;
- Alignment of capacity and demand is made to horizontal and vertical designs;
- Demarcation planning between DTPs without compromise of security and performance;
- Fiber optic design connects every lettable unit, and presents availability for two (2) concurrent connectivity services within the same Minimum Connectivity Services Requirement (MCSR) category within each unit;
- Support to TSP on different standards such as PON, GPON, XGPON; and
- To employ hardware and components to satisfy demand growth.

Infrastructure and services shall be configured to ensure that the end-users in all lettable locations will have a choice of Lessees, that is not constrained by passive infrastructure, save for any requirements to provide multiple (more than two) services in parallel to a single unit.

The components of the MMR (or MMRs) would include at least racks (including at least WDM devices, OTN devices, Patch panels, Power distribution units), Optical Distribution Frame (ODF), power distribution system and cooling components to ensure that the MMR has the capabilities of meeting the present and future requirements of the Service Area.

The JV shall ensure clear demarcation of responsibilities among the JV and Lessees.

***Within ninety (90) days from the Commencement Date,*** as part of the initial Implementation Plan, the JV shall provide details on the following:
- Methodology for on-site fiber management in locator premises;
- Alignment of capacity and demand is made to horizontal and vertical designs;
- Typical rack layout to show components that include WDM devices, OTN devices, patch panels, and power distribution units;
- Justification that optical power losses are within the budgets specified in ITU-T standards for Passive Optical Network (PON) types, including at the minimum: G-PON, XG-PON, XGS-PON; and,

- Support for DTP or Lessee's own equipment and optical power loss not exceeding -20dB.

**A3. Availability of differentiated Fiber Services**

The JV shall develop a fiber design strategy for each JV Product Type, including the Minimum Connectivity Services Requirement (i.e., Standard shared Fiber service, Enhanced shared Fiber service, Dedicated Fiber service, Resilient Fiber service), that can be applied from MMR to relevant locator buildings/lettable units to ensure competitive retail services can be delivered based on the JV Product Types, including clarity on breakout and fiber sharing approach.

The JV shall install single mode optical fiber from the MMR(s) to the Network Termination Points (NTP) at every potential lettable customer location, as described at section A1b and A2. All installation equipment and works shall comply with industry standards for FTTP networks at the time of installation or renewal. Advances in standards shall be implemented for new installations, including capacity enhancement or renewals, but the JV shall not be obligated to retrofit earlier installations unless such retrofitting becomes a legal and/or regulatory requirement in the future provided that a cost recovery through compensation and/or tariff increase would be available from the relevant authority/regulator.

Optical fiber shall be terminated at an NTP within every lettable unit, at a location suitable for the installation of electrically powered customer premises equipment.

The JV shall develop a strategy and approach for on-site fiber management in locator premises to support competition between Lessees without compromises of security and performance.

**A4. Underground installation of conduits and fiber**

All passive infrastructure shall be buried throughout the Service Area. The JV shall install all fiber optic cables within underground conduits that align with MCSR objectives for resilience, dimensions, and provisions.

Aerial fiber shall not be used within the Service Area, except as temporary infrastructure to mitigate any delay in the construction of underground conduits committed by BCDA thereby allowing the JV to provide the MCSR and meet its obligations for service availability. Any installed aerial fiber on a route, together with poles and other supporting infrastructure, shall be removed within ninety (90) days of the completion of underground conduits along such route.

For the avoidance of doubt, aerial fiber shall not be used to mitigate delays or omissions by the JV in meeting its obligations under this Agreement to establish ICT infrastructure.

**A5. Use of high-grade optical fiber**

During initial network build, the optical fiber performance shall be based on a minimum specification of the ITU-T G.652D standard for outdoor installations and the ITU-T G.657A standard for in-building installations.

Throughout the term of the Agreement, all new optical fiber installed shall comply with these requirements or the equivalent within any new standards that supersede these specifications.

## A6. Ready for Mobile Network Operators and Smart City

The JV shall design and construct ICT infrastructure and optical fiber network within NCC to enable the provision of the MCSR to non-typical and typical connection points for building and non-building technology usage for both mobile network operators and Smart City initiatives alignment with differentiated service provisions including, but not limited:

- Street telecommunication cabinets;
- Smart Pole with small cell antenna provision for cellular networks;
- Smart Shelters;
- Rooftop telecommunication towers or small cell antenna setup; and
- Traditional telecommunication towers.

***Within ninety (90) days from the Commencement Date***, as part of the initial Implementation Plan, the JV shall provide the design standard and guidelines (DSG) and schematics for the above in addition to providing the list and technical specifications of recommended components.

The JV shall review all DSG annually throughout the term of this Agreement to ensure that new installations adopt updated industry standards. To meet developer requirements, amendments may be proposed between annual reviews and adopted on an interim basis prior to the next review.

***Within ninety (90) days from the Commencement Date,*** as part of the initial Implementation Plan, the JV shall also provide bills of materials that aligns with differentiated service provisions, including:

- Standard shared Fiber service;
- Enhanced shared Fiber service;
- Dedicated Fiber service; and
- Resilient Fiber service.

The JV shall review all bills of materials annually throughout the term of this Agreement to ensure that new installations adopt updated industry standards. To meet developer requirements, amendments may be proposed between annual reviews, and adopted on an interim basis prior to the next review

## A7. Design Standards and Guidelines for civil works

The JV shall develop and maintain during the term of this Agreement, DSG specific to civil works and outside plant installation of passive ICT infrastructure to enable consistent infrastructure development across NCC, irrespective of land ownership and/or tenure.

The DSG shall be drafted ***within ninety (90) days from the Commencement Date*** and be reviewed annually throughout the term of this Agreement to ensure that new installations adopt updated industry standards.

The DSG for civil works shall include as a minimum:

- Detailed installation standards and specifications of all outside plant such as conduits, manholes, handholes, fiber optic cables for BCDA and other locators/ real estate developers to enable consistent infrastructure development across NCC, irrespective of land ownership and/or tenure;
- Detailed specification for the connection of non-building access points, that will support smart city equipment and mobile network small cells and Wi-Fi access points;

- Detailed specification to outline common standards and approaches, especially different approaches taken for the physical installation by multiple civil works contractors;
- Other specifications that relate to the installations at the boundaries of the locator plots and within buildings, such that the interconnection and deployment of a fully integrated network is cost-efficient and supports service level agreements;
- Approach to determine the number of conduits to be installed and the sizing of optical fiber cables to be deployed to meet early demand and allow ability to expand to meet subsequent phases of development; and
- Other specifications that ensure ICT interoperability.

***Within ninety (90) days from the Commencement Date,*** as part of the initial Implementation Plan, the JV shall provide schematics (A3-sized) for the following:

- Concrete encased telecommunication ducting schematic in for each arterial road - sectional view
- Concrete encased telecommunication ducting schematic in for each collector road - sectional view
- Concrete encased telecommunication ducting schematic in for each local road - sectional view
- Concrete encased telecommunication ducting schematic in for crossroad - sectional view
- Telecommunication chambers schematics and locations

**A8. Design Standards and Guidelines for real estate developers**

The JV shall develop and maintain during the term of this Agreement, DSG specific to in-building assets for passive ICT infrastructure to enable consistent infrastructure development across NCC, irrespective of land ownership and/or tenure.

The DSG for real estate developers shall include as a minimum:

- Detailed installation standards and specifications of all in-building assets for real estate developers;
- Detailed specification for the interface within buildings between outside plant and in-building assets, that enable efficient use of the infrastructure, competitive retail services and customer switching between Lessees;
- Detailed specification of a Communications Room (room in the building that connects the JV ICT, TSP and building networks and hosts all digital communication and network devices) for those buildings where Lessees may wish to install active equipment for aggregation of multiple customer services;
- Detailed specification to outline common standards and approaches, especially where different approaches may be adopted for the physical installation by multiple works contractors;
- Cable routing schematics;
- Conduit and cable tray sizing and recommendations for both vertical and horizontal runs;
- List and technical specifications of recommended components;
- Other specifications that relate to the installations within buildings, such that the interconnection and deployment of a fully integrated network is cost-efficient and supports service level agreements; and,
- Other specifications that ensure ICT interoperability.

***Within ninety (90) days from the Commencement Date,*** as part of the Initial Implementation Plan, the JV shall provide details on the following:

- Communications room design and schematics;
- Cable routing schematics;

- Conduit and cable tray sizing calculations and recommendations for both vertical and horizontal runs; and,
- List of technical specifications of recommended components.

The DSG will be made available to developers, at no charge, to ensure that all developments comply with the standards and that developer-built infrastructure can be integrated for delivery of wholesale passive services to lettable units.

The JV will publish the process of developer engagement, including the process for integration and adoption of developer-built infrastructure, with SLAs for each stage of the process that would require a response by the JV, to ensure that the network infrastructure can be developed both in the public and private/locator land to meet the developer's required availability date for ICT Infrastructure.

### A9. Compliance with national standards

The JV shall ensure that the infrastructure and DSG shall require compliance with national Philippines standards and Prudent Industry Practice, appropriate to the infrastructure, including but not limited to:

- Telecommunication Industry Association (TIA);
- National Telecommunications Commission (NTC);
- Local Telecommunication Utility Company Standards;
- Local Building Standards;
- Philippine Electrical Code (PEC);
- Department of Public Works and Highways (DPWH); and,
- National Electrical Code (NFPA 70)

If any deviation from national Philippines standards is necessary, the rationale shall be presented to the BCDA for approval and the final decision shall be made by the BCDA.

## B. REPAIR AND MAINTENANCE

**Table 3: Repair and Maintenance: Overview of MPSS**

| MPSS | Minimum requirement overview |
|---|---|
| **B1. High-performing infrastructure** | The JV shall monitor, repair and maintain the ICT infrastructure to ensure the designed service performance of the ICT infrastructure and MCSR is maintained |
| **B2. Customer Service – Network management capability offering a single point of contact for Lessees' fault management** | The JV shall establish a network management capability available at all times (24 hours a day / 7 days a week / 365 days a year) as the single point of contact for Lessees' fault management. |
| **B3. GIS-based record of infrastructure assets and electronic record of fiber assets** | The JV shall maintain records of its ICT infrastructure utilizing a geographic information system (GIS), that follows an open standard and enables the export of data to other non-proprietary systems. The JV shall maintain an electronic database for the management of fibers, that can be interrogated, to identify fiber status. |
| **B4. Records accessible to protect and manage infrastructure** | The JV shall make GIS and fiber records and other relevant information available to BCDA and its agents, any developer, other utility, or person with a right to excavate land within NCC in order to protect the infrastructure and assets from damage. The JV shall develop, maintain and publish all process and method statements to protect infrastructure and assets from damage. |

## B1. High performing infrastructure

The JV shall manage and control the infrastructure assets to ensure that the performance and service quality is maintained throughout the term, by employing:

- Capabilities of a Network Management Center;
- Appropriate Operating Support Systems (OSS);
- Active asset monitoring to predict and prevent failures and identify the occurrence of faults and their location without reliance on the DTPs to report faults;
- Resources with relevant capability / skills availability;
- Tools and processes for fault rectification;
- Appropriate in-life management; etc.

***Within ninety (90) days from the Commencement Date,*** as part of the initial Implementation Plan, the JV shall provide details on:

- Active asset and fiber monitoring to predict and prevent failures;
- Tools and process for fault rectification; and,
- Methodology and systems for in-life capacity management.

The JV shall ensure that the resources and capability are available to repair and maintain the infrastructure to meet the Service Availability Requirement and Restoration Times. Repair and maintenance work must ensure that there is no loss in performance of the MCSR or other JV Product Types offered by the JV and meet the Service Availability of all JV Product Types and the SLAs for fault repairs.

The JV shall undertake infrastructure capacity management to ensure in-life assets are developed and enhanced after initial build, and aligned to demand profile, such that the investment is optimized. This shall include:

- Deployment of sufficient Fiber count for cables in each network category
- Overlay of new Fiber cables
- Location and use of splitters for shared services
- Policy on establishment of communications room (room in the building that connects the JV ICT, TSP and building networks and hosts all digital communication and network devices) in customer buildings

***Within ninety (90) days from the Commencement Date,*** the JV shall provide details on the following as part of the initial Implementation Plan:

- Policy on location and use of splitters for shared services;
- Policy on establishment of communications rooms in customer buildings; and,
- Demand profile and capacity calculations used in business model (in Excel).

All necessary works shall be reinstated in line with the original design and SLAs, and any improvements shall be formally noted as part of Network Records Management (see Section B3).

## B2. Customer Service – Network management capability offering a single point of contact for Lessees' fault management

The JV shall develop a strategy for the management of the JV Product Types carried on the passive ICT infrastructure, that shall be designed to meet the Service Availability and Restoration Times.

The JV shall establish prior to the First Service Date, a single point of contact for DTPs for fault management (fault reporting and restoration), that shall be available at all times (24 hours a day / 7 days a week / 365 days a year, throughout the term of this Agreement.

The approach and organization should follow Prudent Industry Practice to deliver an effective, cost-efficient service that shall develop throughout the term as the customer and service base increase. The network management capability of the JV must be organized to scale demand.

**B3. GIS-based record of infrastructure assets and electronic record of fiber assets**

The JV shall maintain records of all ICT infrastructure utilizing a geographic information system (GIS), that follows an open standard and enables the export of data to other non-proprietary systems.
The GIS shall record all owned, managed or interconnected infrastructure, including, but not limited to:

- Underground duct as-built information;
- Chambers, manholes, hand holes;
- Building access infrastructure;
- Non-building access infrastructure;
- Fiber cabling and infrastructure;
- Fiber joints, splicing arrangements; and,
- Co-location infrastructure.

The JV shall maintain an electronic database for the management of fibers, that can be interrogated, to identify fiber status, including, but not limited to:

- In-service fibers;
- Pre-provisioned /spare fibers;
- Circuit routing;
- Customer service taken;
- DTP contracted; and,
- End-user connected.

The GIS and fiber management electronics system shall be updated within twenty (20) Business Days of works completion, including in-life changes. For avoidance of doubt, the requirement to update GIS records within 20 Business Days shall not be a reason(s) and/or mitigation for any service or SLA failure.

The JV shall develop and implement a methodology for:

- Management of integration of record with service provisioning.
- Change management and the process of review and consultation between NMC and engineering teams.

***Within ninety (90) days from the Commencement Date,*** the JV shall provide the following as part of the initial Implementation Plan:

- Process and details for the management of integration of records with service provisioning.
- Sample reports for requests for information.
- Service Level Agreements for requests for information.

## B4. Records accessible to protect and manage infrastructure

The JV shall make GIS and fiber records and other relevant information available to BCDA and its agents, any developer, other utility, or person with a right to excavate land within NCC in order to protect the infrastructure and assets from damage.

The JV shall develop, maintain and publish the following:

- Process for inspection regime for duct infrastructure which includes regular patrol route;
- Engagement process for any developer, other utility, or person with a right to excavate land within NCC to seek the infrastructure location information in GIS format and other information regarding the ICT infrastructure, relevant to the area of excavation. The published engagement process shall clearly state the data available, format and any limitations in respect to enquirers and information;
- Method statement for Control and issue of records for developers, BCDA, third parties; and
- Process for on-site management during third party works,

***Within ninety (90) days from the Commencement Date,*** as part of the initial Implementation Plan, the JV shall provide the method statement for control and issue of records for developers, BCDA, and third parties.

Such obligation to provide the infrastructure location GIS records and other relevant information shall be done in no more than 10 (ten) Business Days from the date of the request.

In addition, the JV shall complete any reasonably foreseeable asset protection activities during developer, utility and/or excavation and inspection works that may impact the passive ICT infrastructure.

The JV shall inspect all assets to comply with any Philippine national standards, and as a minimum shall inspect:

- The network route at not more than 5 (five) yearly intervals; and,
- The manholes/handholes and any visible assets at not more than 2 (two) yearly intervals.

## C. COMMERCIALIZATION

**Table 4: Commercialization: Overview of MPSS**

| MPSS | Minimum requirement overview |
|---|---|
| **C1. Clear process for connecting customers** | The JV shall publish and maintain a service delivery process for end-user services, including any information required to process an order and lead-times for order fulfillment |
| **C2. MMR Interconnection Services to integrate Lessees** | The JV shall establish an MMR Interconnection Service on a minimum of two diverse routes, for the installation of a single optical fiber cable per Lessee, within a sub-duct exclusively between the edge of the Service Area and an MMR, or between MMRs. This shall include such additional services as necessary to support Lessees |
| **C3. Service Level Agreements** | The JV shall enter into Service Level Agreements with Lessees setting out all terms and conditions, including Service Availability and Service Credits, for each JV Product Type, including MMR access for Lessees at all times |
| **C4. Customer Service - Lessee Account Management** | The JV shall establish for each Lessee a single point of contact for account management related to business development, billing and service performance reporting. The service performance reports shall cover:<br>• Service portfolio contracted;<br>• Service Availability;<br>• Faults reports detailing root cause, Restoration Time and necessary remedial actions; |

| MPSS | Minimum requirement overview |
|---|---|
| | • Service Delivery performance;<br>• Service Credits due; and,<br>• Issues under investigation or escalation |

## C1. Clear process for connecting customers

The JV shall develop a delivery strategy for the JV Product Types and an approach to meet BCDA connectivity objectives throughout NCC, and provide a range of wholesale passive services to fulfill locator requirements and variable customer demand, utilizing the installed ICT infrastructure. The strategy shall be prepared within ninety (90) days of the Commencement Date for approval by BCDA and updated not less than ninety (90) days prior to each price rebasing event to align to the Reference Tariff Offer.

The JV shall develop and publish a service delivery process for all JV Product Types that documents the approach to delivering end user services. The processes shall include any information required to process an order and lead-times for order fulfillment.

***Within ninety (90) days from the Commencement Date,*** as part of the initial Implementation Plan, the JV shall develop and provide details on the following processes:

- Enquiry to order, information requirement and availability checking
- Methodology for Order processing
- Methodology for Customer engagement during delivery
- Process for acceptance testing
- Process for handover to customer
- Process for records management
- Process for billing

The JV shall develop processes to provide all JV Product Types. Processes should be monitored to enable reporting on the performance and achievement of lead-times for service delivery.

Service delivery performance shall include, but not be limited to process lead-times for:

- New customers connections, by Service;
- Customer requested switching between Lessees;
- Service changes or upgrades to customer service; and,
- Cease of services.

Unless agreed otherwise in writing with the real estate developer, the MCSR shall be available for all new premises and buildings, not less than 30 Business Days prior to planned date for certification of building completion (the "**Developer's Availability Date**").

## C2. MMR Interconnection Services to integrate Lessees

The JV shall design and establish MMR interconnection services for Lessees on a minimum of two diverse routes. This interconnection services shall be for the installation of a single optical fiber cable, per Lessee, within a sub-duct in a conduit for a network section exclusively between the edge of the Service Area and an MMR or between MMRs. Lessees will have no right to break out fiber along the route to connect to customers or any other fiber cables.

***Within ninety (90) days from the Commencement Date,*** as part of the initial Implementation Plan, the JV shall develop and provide the service description and design for MMR Interconnection including:

- Technical parameters and limitations for interconnections;
- Methodology for the assessment of demand and capacity for each MMR Interconnection route;
- Calculation sheet for the assessment of demand, resourcing, and other factors or inputs required for MMR interconnections services;
- Service description and design for additional services for Lessees; and,
- Service description and technical parameters required for each differentiated service (that includes the MCSR).

The JV shall develop and regularly update the calculation sheet for factors / inputs required for MMR interconnections such as assessment of demand and resourcing.

The MMR Interconnection Services shall be non-discriminatory between Lessees in respect to price, availability and service levels, however distance may be a factor within the pricing mechanism, so long as the calculation methodology is consistent for all Lessees and interconnection routes.

The JV shall retain a minimum of 25% of the total conduit capacity for its own use and for the provision of wholesale fiber services to provide for unforeseen demands of Lessees, requiring such a service, as an alternative to the installation of a fiber cable.

## C3. Service Level Agreement

For each service being provided by the JV, the JV shall enter into a Service Level Agreement (SLA) with Lessees. Such SLA shall at minimum include the terms and conditions related to the following:

- Service Availability for each service;
- Fault response time;
- Service Restoration Time;
- Delivery lead-times;
- NMC response times;
- Service Credits; and,
- Other performance criteria defined in the MPSS.

***Within ninety (90) days from the Commencement Date,*** as part of the initial Implementation Plan, the JV shall provide details on the terms and conditions for the following:

- Invoice and payment terms;
- Policy for advance notice period for access to MMR to address faults and makes installation, moves and changes of Lessee equipment;
- Force majeure;
- Limits of liability; and
- Any additional terms and conditions of the SLA not listed above.

The JV shall document a minimum committed Service Availability in the SLA and provide and maintain the JV Product Types to such minimum committed Service Availability for each service.

Such minimum committed Service Availability shall not be less than **99.95%** per month for a non-resilient service and **99.99%** per month for resilient service. A resilient service will be deemed available if one of the two fiber paths is available.

The MMR shall be accessible by Lessees as a minimum standard:

- For routine work shall be available for a minimum of 0800 – 1800 hrs, on all Business Days;
- For planned work 24 (twenty-four) hours per day, every day (24/7/365) with a minimum of 10 (ten) Business Days notification by the Lessees; and,
- For fault rectification by the Lessee on its own equipment, within 10 minutes of request by the Lessee.

In case of any failure to meet the Service Availability and Service Restoration Time, the JV shall provide Service Credits to the Lessees as described in the relevant sections below.

In case that the JV Partner has proposed a higher minimum committed Service Availability and Service Credits than those stated below during the Competitive Selection Process and has subsequently won the Competitive Selection Process, then the minimum stated will be overridden by the higher minimum Service Availability and Service Credits proposed.

## C4. Customer Service – Lessee Account Management

The JV shall develop a strategy for the management of customers services, that shall be designed to meet the MPSS, Service Availability and Restoration Times.

The JV shall establish customer service management, including Business Support Systems (BSS) and dedicated points of contact for the management of the DTP accounts and JV business, prior to the First Service Date, to manage each DTP's portfolio of services. The approach and organization should deliver an effective, cost-efficient service that shall develop throughout the term as the customer and service base increases following Prudent Industry Practice.

***Within ninety (90) days from the Commencement Date,*** as part of the initial Implementation Plan, the JV shall develop and provide details on:

- BSS;
- Performance management and service reporting;
- Process for lessee relationship management;
- Portfolio management of Lessee services;
- Hours of operations; and,
- Escalation Process.

There shall be no requirement to interface directly with end users, who should only interface with Lessees.

The JV shall provide service performance reports to each DTP, not less frequently than monthly, identifying as a minimum:

- Service portfolio contracted;
- Faults reports detailing root cause, Restoration Time and necessary remedial actions;
- Service performance against Service Availability;
- Service Delivery performance;
- Service Credits due; and,
- Issues under investigation or escalation.

Customer service – lessee account management should be available between 0900 hours and 1700 hours on a Business Day ("Business Hours") and conform to Prudent Industry Practice. An escalation process shall be provided to manage protracted or out of hours issues, following Prudent Industry Practice.

## D. ORGANIZATION AND IMPLEMENTATION

**Table 5: Organization: Overview of MPSS**

| MPSS | Minimum requirement overview |
|---|---|
| **D1. Commitment to maintain same level of experience and expertise of key personnel** | The Key Personnel's minimum experience and qualification requirements and certification shall be maintained at the same level throughout the JV Term. |
| **D2. Published Complaints and Grievance Procedure** | The JV shall publish and support a Complaints and Grievance Procedure |
| **D3. Submission of Implementation Plans** | The JV shall develop, maintain and update implementation plans for the network design, construction and delivery of JV Product Types throughout the term of this Agreement. |

### D1. Commitment to maintain the same level of experience and expertise of key personnel

The JV organization shall be structured to meet the requirements set out in this Agreement. The minimum requirements for the Key Personnel, listed in Schedule 4, are set out in the table below.

**Table 6: Key Personnel Minimum Requirements**

| Role | Minimum requirement |
|---|---|
| Chief Executive Officer | - Individual with experience in (i) financial management, (ii) business performance improvement, and (iii) directing and supervising multi-disciplinary technical, financial, and commercial teams.<br>- Relevant degree from an accredited educational institution (or such institution accredited by the competent authorities in the country where it is registered).<br>- The individual must also have at least five (5) years' of relevant business experience with at least three (3) years' leadership role in managing telecommunications business unit serving mixed enterprise and residential market. |
| Chief Technology Officer | - Individual with experience in (i) oversight of network design and operations of mixed enterprise and residential network and (ii) extensive familiarity in telecommunications network design and technology.<br>- Relevant degree from an accredited educational institution (or such institution accredited by the competent authorities in the country where it is registered) and recognized professional qualification or license in computer science or related. discipline.<br>- He or she must have at least five (5) years' experience in technology roles within a telecommunications business with at least three (3) years' leadership role in technology team within telecommunications business dealing with fiber, transport, and IP Networks |
| Chief Financial Officer | - Individual with experience in financial reporting. |

| Role | Minimum requirement |
|---|---|
| | - Relevant degree from an accredited educational institution (or such institution accredited by the competent authorities in the country where it is registered).<br><br>- He or she must have at least five (5) years' accounting and finance experience with at least three (3) years' leadership role in management of profit and loss for a business unit with multiple products and differentiated customer base, preferably in the telecommunications industry. |
| Head of Legal and Regulatory | - Experience in: (i) handling responsibility for customer and supplier contract development and negotiation and (ii) working on regulatory and government (or other major institution) compliance, preferably for external party/clients engaged in the telecommunications business.<br><br>- At least a bachelor's degree in law and member of the Philippine Bar.<br><br>- At least five (5) years' legal and regulatory experience with at least three (3) years' leadership role in management of legal team for a business unit with multiple products and differentiated customer base, preferably in the telecommunications industry. |
| Head of Network Management | - Experience in management of service assurance activity and resolving network faults for enterprise and residential networks.<br><br>- Relevant degree from an accredited educational institution (or such institution accredited by the competent authorities in the country where it is registered) and recognized professional qualification in electronics engineering or computer engineering.<br><br>- He or she must have at least five (5) years' experience in operations roles within a telecommunications business with at least three (3) years' leadership role in management of network operations within telecommunications business dealing with fiber, transport and IP Networks. |
| Head of Delivery and Service Provision | - Experience in (i) management of network build projects aligned to corporate experience requirements; (ii) management of service fulfilment activity to provision new services for enterprise and residential networks; and (iii) management of permitting and submission activities related to build and construction to provision of fiber network.<br><br>- Relevant degree from an accredited educational institution (or such institution accredited by the competent authorities in the country where it is registered) and recognized professional qualification in engineering or management.<br><br>- At least five (5) years' experience in project or service delivery or fulfillment roles within a telecommunications business with at least three (3) years' leadership role in management of network build and/or customer service provisioning operations within telecommunications business dealing with fiber, transport and IP Networks. |
| Head of Sales and Marketing | - Experience in: (i) strategic planning and collaboration with executive, sales, marketing, product development and key operational groups; (ii) setting up organization in sales and marketing; (iii) leadership and managing a sales organization with regional responsibility and establishing long term strategic growth initiatives; (iv) creating clear action plans; and (v) developing successful marketing/sales programs as demonstrated by records of accomplishments in the said programs.<br><br>- Relevant degree from an accredited educational institution (or such institution accredited by the competent authorities in the country where it is registered) and recognized professional qualification in sales and marketing, or management.<br><br>- At least five (5) years' recent and relevant sales and marketing experience preferably within ICT-related industry with at least three (3) years' leadership position in sales and marketing team. |

## D2. Published Complaints and Grievance Procedures

The JV shall establish and implement Complaints and Grievance Procedures, for Lessees, in respect of the pricing, terms and conditions, and performance of the JV Product Types.

The procedure shall cover management process and review mechanism, response time for SLAs and publication process to enable others to understand issues and remedial actions.

The procedure shall incorporate an escalation process that includes BCDA and an independent arbitrator, to ensure all reasonable endeavors are taken prior to exercising legal remedies. The grievance procedure shall in no way seek or purport to limit rights and remedies available in law.

Such Complaints and Grievance Procedures shall be prepared within three (3) calendar months from the Commencement Date and shall be approved by BCDA. It shall be reviewed annually throughout the term of this Agreement, with amendments approved by BCDA.

## D3. Submission of Implementation Plans

The JV shall develop, maintain and update implementation plans for the network design, construction and delivery of JV Product Types in the Service Area throughout the term of this Agreement, including but not limited to the Milestones at section 0.

The plan shall incorporate:

- Project Milestones in MPSS, including launch of the MCSR by the First Service Date;
- Network design, construction and delivery of wholesale services;
- Integration of existing assets into the passive infrastructure;
- Interconnection with DTPs to enable access to the MCSR prior to the First Service Date;
- Establishment and management of Customer Service, NMC, OSS and BSS;
- Additional commitments provided by anchor tenant DTPs and MNOs; and
- The forecasted plan for infrastructure design, construction, repair and maintenance and commercialization underpinning the Reference Tariff Offer and the rebasing mechanism aligned to the 2025-2035 demand forecast and as updated as required for the relevant rebasing period. This shall include an outline plan for additional construction aligned to locator / population forecasts for duration of initial Reference Offer.

Any additional external dependencies and BCDA obligations, with required-by dates, shall be identified and described clearly. The JV milestones shall be implemented in consultation with BCDA so that such applicable external dependencies and BCDA obligations will have been met and/or complied with by the BCDA in accordance with the JVA, section 14.5.

The Implementation Plan shall be updated, not less than quarterly, reflecting the circumstances and customer needs of NCC, until completion of construction of the passive infrastructure required to serve the Service Area. The plan shall be issued to BCDA within 5 Business Days of completion of the quarterly update.

The Implementation plan submitted to support the rebasing mechanism for pricing of the MCSR, shall be supported by evidence to substantiate demand and cost assumptions.

# E. KEY PERFORMANCE INDICATORS (KPIs)

**Table 7: KPIs: Overview of MPSS**

| KPIs | Performance requirement overview | Service Credits Payable to Lessees | Service Credits Payable to Developer |
|---|---|---|---|
| **E1. Service Availability** | The JV shall meet the Service Availability requirement for the JV Product Types | | |
| **E2. Service Credits** | | The JV shall pay Service Credits to Lessees for the failure to meet any Service Availability of a JV Product Type.<br>a. service availability<br>b. service restoration time | The JV shall pay Service Credits to Developers for the failure to meet Developer network availability |
| **E3. Project Milestones** | The JV shall deliver the JVA requirements to meet the identified project Milestones | | |

## E1. Service Availability

The JV shall meet the Service Availability Requirement for all of the JV Product Types. From First Service Date, the Service Availability Requirement for the MCSR shall be as provided in Table 8 below. If the JV Partner offered higher than the Service Availability Requirement below during the Competitive Selection Process, such offer shall become the Service Availability Requirement.

**Table 8. Service Availability Requirement**

| Service Type | Service Availability Requirement |
|---|---|
| Standard shared fiber service | 99.95% |
| Enhanced shared fiber service | 99.95% |
| Dedicated fiber service | 99.95% |
| Resilient fiber service | 99.99% |
| Co-location – MMR | 99.95% |

### a. Monthly Service Availability For Individual Lessee

The JV will calculate on a monthly basis, the Service Availability of every JV Product Type contracted with a Lessee, including but not limited to, the MCSR. For each JV Product Type contracted each Lessee, The Monthly Service Availability shall be measured as follows:

$$Monthly\ Service\ Availability\ to\ Individual\ Lessee = \left[\frac{(A-B)}{A}\right] x\ 100\%$$

where:
A = total number of minutes in the month for which a JV Product Type must be available to a Lessee
B = total number of minutes during the month that a JV Product Type is not available to a Lessee as a result of one or more faults, for which the JV is responsible.

### b. Monthly Service Availability For All Lessees

For each JV Product Type, the JV shall also calculate the Monthly Service Availability to all Lessees , as follows:

$$Monthly\ Service\ Availability\ for\ All\ Lessees = \left[\frac{(\sum_{i=1}^{n} C_i) - (\sum_{i=1}^{n} D_i)}{(\sum_{i=1}^{n} C_i)}\right]\ x\ 100\%$$

where:
$C_i$ = total number of minutes in a month for which a JV Product Type must be available to Lessee *i.*
$D_i$ = total number of minutes in a month that a JV Product Type is not available to Lessee *i* as a result of one or more faults for which the JV is responsible.
n = total number of contracted Lessees in a month for a JV Product Type.

**c. 12-Month Rolling Average Service Availability to All Lessees**

**12-month rolling average Service Availability of Lessees** = Sum of (monthly Service Availability of Lessee for the current month and the preceding 11 months) / 12

In case the Service Availability of Lessees is available for less than 12 (twelve) months, then the rolling average shall be calculated as follows:

*Sum of (Service Availability of DTP for the current month and all preceding months) / count of all of months available for calculation of the sum.*

If the 12-month rolling average Service Availability of Lessees falls below the contracted Service Availability for three consecutive months, the JV shall prepare a remedial plan that shall be agreed with the Lessee with progress reported monthly until the 12-month rolling average Service Availability of Lessees is above the contracted Service Availability. The JV shall report to BCDA of all remedial plans in the monthly Repair and Maintenance Report and shall provide copies of such within three Business Days if requested.

## E2. Service Credits

From First Service Date, the Service Credits for the MCSR shall be as provided in Table 9 below. If the JV Partner offered higher than the Service Credits above during the Competitive Selection Process, such offer shall become the Service Credits.

**Table 9. Service Credits**

| Service Type | Service Credits |
|---|---|
| Standard shared fiber service | 5% |
| Enhanced shared fiber service | 5% |
| Dedicated fiber service | 5% |
| Resilient fiber service | 5% |
| Co-location – MMR | 5% |

**a. Service Credits Due To Monthly Service Availability to Individual Lessee**

The JV shall provide Service Credits to each affected Lessee for every JV Product Type that has an availability below the contracted Monthly Service Availability, in any month.

The Service Credit shall not be less than 5% of the Monthly Service Fee for every affected JV Product Type that falls below the contracted Service Availability Requirement. Additional Service Credits shall be paid if the Restoration Time for any fault is not met, as described below.

Service Credits shall be calculated and paid automatically by the JV. The Lessee shall have no requirement to claim a Service Credit, all Service Credits shall automatically be applied to the subsequent monthly invoice.

**b. Service Credits Due To Service Restoration Time**

The JV shall commit to fault response and Service Restoration Times within the SLA for all services. The Service Restoration Time shall be the period of time between the identification by, or notification of, a fault to the JV and the rectification of the fault to restore performance of any affected services (the "Restoration Time").

The JV shall provide Service Credits to affected Lessees for every service fault where the Restoration Time exceeds the times stated within the SLA. The Restoration Time shall be calculated for every fault or incident and shall be used for the calculation of Service Credits due to Lessees. Service Credits for a failure to rectify faults within the Restoration Time shall be paid in addition to the Service Credits due to lower than committed Service Availability.

The Service Credit due with respect to Service Restoration Time shall be not less than 5% of the Monthly Service Fees for each affected JV Product Type and each incidence, for each of the periods described below. If the JV Partner offered higher than this minimum Service Credit during the Competitive Selection Process, such offer shall become the minimum as stated in paragraph 0

For <u>service affecting</u> faults, the target Restoration Time shall not be greater than 8 (eight) hours. The minimum SLA requirement shall be:

- Service Credit for failure to fix a fault within the target Restoration Time
- Service Credit for failure to fix a fault within 24 (twenty-four) hours
- Service Credit for failure to fix a fault within each subsequent, or part thereof, 24 (twenty-four) hour period (i.e., 25, 33 or 48 hours will receive the same Service Credit)

For <u>non-service affecting</u> or <u>degradation</u> faults, the target Restoration Time shall be no more than 24 (twenty-four) hours. The minimum SLA requirement shall be:

- Service Credit for failure to fix a fault within the target Restoration Time
- Service Credit for failure to fix a fault within 24 (twenty-four) hours
- Service Credit for failure to fix a fault within each subsequent, or part thereof, 24 (twenty-four) hour period (i.e., 25, 33 or 48 hours will receive the same Service Credit"

Service Credits shall be calculated and paid automatically by the JV. The Lessee shall have no requirement to claim a Service Credit, which shall automatically be applied to the subsequent monthly invoice.

*For the avoidance of doubt, an illustrative example of a fault that takes 55 hours to repair and its calculation of the minimum Service Credits is provided below.*

- *Service Credit due to Service Availability – 5%*
- *First 8 hours – 5%*
- *First 24 hours – 5%*
- *Second 24 hours (i.e., 24 – 48 hours) – 5%*
- *<u>Part thereof the next 24 hours (I.e., 48 – 55 hours) – 5%</u>*

*Total due = 25% of the monthly Service Fee*

If more than one Service is affected, or a service is affected more than once in a month, then this applies to each and every connected Service and each incidence.

### c. Developer Service Credits for Network Availability

From First Service Date, the Developer Service Credits shall be as provided in Table 10 below. If the JV Partner offered higher than the Developer Service Credits below during the Competitive Selection Process, such offer shall become the Developer Service Credits.

**Table 10. Developer Service Credits**

| Developer Type | Developer Service Credits | Base Monthly Service Fee |
|---|---|---|
| Residential | 1% | Standard Shared Fiber Service |
| Commercial | 1% | Dedicated Fiber Service |
| Industrial | 1% | Resilient Fiber Service |

The JV shall provide Developer Service Credits to real estate developers within NCC for failure to develop the required network infrastructure, in the public and (private) developer land, by the Developer's Availability Date.

For each week or part thereof of delay after the Developer's Availability Date, Developer Service Credits of not less than those in Table 10 shall be paid to the real estate developer, aligned for property types, described below:

- Residential – Standard shared fiber service
- Commercial – Dedicated fiber service
- Industrial – Resilient fiber service

*For the avoidance of doubt, illustrative example of the network availability being delayed for 25 days from Developer's Availability Date, the calculation of the minimum Service Credits is provided below:*

- *Residential apartment block of 100 apartments:*
  - *4 delay periods (week or part thereof)*
  - *100 units*
  - *Service Credit: Standard shared fiber service Monthly Service Fee x (4 x 100 x 1%)*
- *Commercial factory of 10 units:*
  - *4 delay periods (week or part thereof)*
  - *10 units*
  - *Service Credit: Dedicated fiber service Monthly Service Fee x (4 x 10 x 1%)*

For the avoidance of doubt, the Developer Service Credit that the JV will be required to pay for any given month shall not exceed [30%] of the Monthly Service Fee for such month when the Service Credits become due. In case the Developer Service Credits payable by the JV exceed the maximum percentage of [30%], the Developer Service Credit beyond the maximum percentage will be carried over to the subsequent monthly invoice and applied to such subsequent invoice.

## E3. Project Milestones

The JV shall achieve the project milestones in Table 11 and Table 12.

### Table 11: Initial Delivery Milestones

| Milestone | Description | Milestone Completion Date* |
|---|---|---|
| 1 | Submission of initial Implementation Plan and TPA-2: Post-Award Documents | T + 3 months |
| 2 | Publish Reference Tariff Offer | T + 3 months |
| 3 | Submission of TPA-2 Post Award Documents under A. Design and Construction | T + 3 months |
| 4 | Submission of TPA-2 Post Award Documents under B. Repair and Maintenance | T + 3 months |
| 5 | Submission of TPA-2 Post Award Documents under C. Commercialization | T + 3 months |
| 6 | Submission of list of comparable companies that have been reviewed and approved by BCDA for the purposes of calculating Equity Premium and for tariff rebasing. | T + 3 months |
| 7 | Service Delivery Strategy | T + 3 months |
| 8 | Complaints and Grievance Procedures | T + 3 months |
| 9 | Meet Me Room available for Lessee equipment co-location | T + 5 months |
| 10 | First Service Date | T + 6 months |
| 11 | Publish DSG for civil works and for real estate developers | T + 6 months |
| 12 | Network Customer and Service Management | T + 6 months |

### Table 12: Developer Availability Dates

| Milestone | Developer site | Completion Date |
|---|---|---|
| 13 | NGAC | T + 6 months |
| 14 | Filinvest Mixed Use Industrial Development Phase 1 | T + 6 months |
| 15 | National Academy of Sports Phase 1 | T + 6 months |
| 16 | Sky Blue NCC Golf and Resorts Corporation | T + 6 months |
| 17 | Polytechnic University of the Philippines | T + 6 months |
| 18 | DA Agro Hub Phase 1 | T + 6 months |
| 19 | Philippine Science High School | T + 6 months |
| 20 | Sindicatum Solar Farm | T + 6 months |
| 21 | University of the Philippines (Satellite) | T + 6 months |
| 22 | BSP Coin Minting Facility | October 2024 |
| 23 | Virology Institute of the Philippines | December 2024 |
| 24 | DA Agro Hub Phase 2 | March 2025 |
| 25 | NCC Luxury Mountain Resort | October 2025 |

* The time "T" in the table above means the Commencement Date of the JVA.

Milestone Acceptance for the connection of identified sites (Milestones 13 – 25) shall be achieved through demonstration of the availability of the MCSR at the identified building.

## F. LIQUIDATED DAMAGES PAYABLE TO BCDA

### Table 13. Liquidated Damages Payable to BCDA

| KPIs | LD payable to BCDA |
|---|---|
| **E1. Service Availability** | The JV shall pay LD to BCDA for the failure to meet any Service Availability of a JV Product Type.<br>a. service availability<br>b. Developer network availability |
| **E2. Project Milestones** | The JV shall pay LD to BCDA for the failure to meet any Project Milestones and Implementation Plan milestone. |

**Basis for Liquidated Damages (LD)**

The BCDA may claim Liquidated Damages from the JV Partner if the JV is in breach of its obligations by failing to meet the Key Performance Indicators (KPI) for ICT Infrastructure and services, detailed in this section.

LDs will not be payable for planned service interruptions for which prior notification has been given to customers with estimated duration.

**F1. Liquidated Damages for Monthly Service Availability for All Lessees for each JV Product Type, except Co-location MMR service**

For each JV Product Type, the JV shall pay LDs to BCDA if the **Monthly Service Availability For All Lessees** as calculated in Section 2.E1.b, is less than the minimum Service Availability for that JV Product Type.

LDs shall be calculated, based on the rate of the minimum Service Credit of not less than 5% of Service Fees. If the JV Partner offered higher than this minimum Service Credit during the Competitive Selection Process, such offer shall become the minimum as stated in section 2.3.3, this being the "**Service Availability LD Rate**".

For each JV Product Type, the LDs doe to BCDA shall be proportional to the amount that the monthly Service Availability is below the contracted Service Availability and shall be calculated as follows:

$$LDs\ due\ to\ BCDA = (P - Q)\ x\ \frac{R}{0.01\%}\ x\ S$$

*P = Minimum Monthly Service Availability set for the JV Product Type.*
*Q = Actual Service Availability for the month for All Lessees for the JV Product Type, except Co-location MMR service, as calculated in 2.E1.b.*
*R = Service Availability LD Rate.*
*S = Gross monthly revenue in the immediately preceding month for the JV Product Type contracted.*

The LDs shall be calculated for each JV Product Type and the total shall be payable to BCDA. LDs shall be calculated and reported monthly in the monthly report (substantially in the form provided in Exhibit D of the JVA) paid by the JV to BCDA, within three (3) days from the JV's receipt of the relevant monthly invoice.

**F2. Liquidated Damages for Monthly Service Availability for Co-location MMR service**

For each MMR, the JV Partner shall pay LDs to BCDA if the Monthly Service Availability for All Lessees for Co-location MMR service, as calculated in Section 2.E1.b, is less than the corresponding minimum Service Availability.

LDs shall be calculated, based on the rate of the minimum Service Credit of not less than 5% of Service Fees. If the JV Partner offered higher than this minimum Service Credit during the Competitive Selection Process, such offer shall become the minimum as stated in section 2.3.3, this being the "**Service Availability LD Rate**".

The Liquidated Damages shall be proportional to the amount that the monthly Service Availability is below the contracted Service Availability and shall be calculated as follows:

$$LDs\ due\ to\ BCDA\ for\ Co-location\ MMR = (P - Q)\ x\ \frac{R}{0.01\%}\ x\ S$$

*P = Minimum Monthly Service Availability set for Co-location MMR Service*
*Q = For each MMR, actual Service Availability for the month of Co-location MMR Service as calculated in Section 2.E1.b.*
*R = Service Availability LD Rate*
*S = Total gross monthly revenue in the immediately preceding month divided by total number of MMRs*

## F3. Liquidated Damages for Developer Network Availability

The JV shall pay LDs to BCDA for every occasion when the Developer's Availability Date is not met.

The LDs shall be equal in value to the Service Credits due to all Developers, as calculated in section E.2.c Developer Service Credits for Network Availability.

LDs shall be reported monthly in the monthly report (substantially in the form provided in Exhibit D of the JVA) paid by the JV to BCDA, on a quarterly basis.

## F4. Liquidated Damages for Implementation Plan

The JV shall pay LDs to BCDA for the failure to meet the Milestone completion dates set out in Table 11.

For Milestones 1-12 in Table 11, the LDs shown in Table 14 shall be payable for each week or part thereof, of delay to completion of the relevant Milestone. In the case of Milestones 3-5, the Liquidated Damages will apply to all documents required to be submitted under each category of A, B and C and accrue until all documents under each category are submitted.

For Milestones 13 – 25 in Table 12, LDs shall be calculated in accordance with the Developer Network Availability calculation above.

**Table 14: Milestone Liquidated Damages**

| Milestone | Description | Liquidated Damages per week or part thereof |
|---|---|---|
| **1** | Initial Implementation Plan and TPA-2: Post-Award Documents | PHP 100,000 |
| **2** | Publish Reference Tariff Offer | PHP 500,000 |
| **3** | Submission of TPA-2 Post Award Documents under A. Design and Construction | PHP 100,000 |
| **4** | Submission of TPA-2 Post Award Documents under B. Repair and Maintenance | PHP 100,000 |
| **5** | Submission of TPA-2 Post Award Documents under C. Commercialization | PHP 100,000 |
| **6** | Submission of list of comparable companies that have been reviewed and approved by BCDA for the purposes of calculating Equity Premium and for tariff rebasing. | PHP 100,000 |
| **7** | Service Delivery Strategy | PHP 100,000 |
| **8** | Complaints and Grievance Procedures | PHP 100,000 |
| **9** | Meet Me Room available for DTP equipment co-location | PHP 200,000 |
| **10** | First Service Date | PHP 500,000 |
| **11** | Publish DSG for civil works and real estate developers | PHP 100,000 |
| **12** | Network Management Service Availability, including NMC and OSS/BSS | PHP 100,000 |

## F5. Limit of Liquidated Damages

There shall be no limit applied to the Liquidated Damages until the First Service Date is achieved.

After the First Service Date, the maximum amount that can be paid by way of Liquidated Damages shall not exceed each month, an amount which is equal to 30% of the gross revenues of the JV for that month and for each year, an amount which is equal to 30% of the gross revenues of the JV for that year.