

DDOT Guidelines for Comprehensive Transportation Review (CTR) Requirements



District of Columbia,
Department of Transportation



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1. Introduction

The District Department of Transportation (DDOT) is committed to achieving an exceptional quality of life in the nation's capital through sustainable travel practices, safe streets and outstanding access to goods and services. For the purpose of Zoning Review, DDOT's Development Review Branch evaluates the effect of development proposals on the City's comprehensive transportation network to ensure that alterations to the transportation network are in line with DDOT policies and practices. As part of this evaluation, DDOT often requires a Comprehensive Transportation Review (CTR). The information provided herein is intended to explain when a private property owner is required to conduct a Comprehensive Transportation Review (CTR) for a proposed development in the District of Columbia, and what information must be included in a CTR.

2. Purpose and Need

Conducting a CTR is the responsibility of the property owner or his/her designee (hereafter referred to as the "Applicant") in charge of a proposed development project. Ideally, the CTR will be completed early in the land development process so that site-specific design elements causing impacts to the community may be identified and mitigated prior to full site design.

In general, a CTR must identify the additional trips a proposed project would bring to the area; determine how these additional trips will impact the transportation system; propose actions that would mitigate the impacts; and show how the proposed mitigations affect other transportation modes.

The analysis contained within the CTR is expected to reflect the city's multi-modal investment, and the requisite depth of the CTR will be based largely upon the proposed development, surrounding land use, and existing and planned transportation infrastructure. The guidelines herein are intended to provide direction to private developers and their consultants on how to evaluate their projects, and to promote clarity and consistency for all stakeholders in the development review process.

2.1 Roll of CTR in Development Review Process

As will be discussed in Section 2.2, a CTR is not necessary for every project. When required, however, it becomes an important document for DDOT to evaluate overall impacts and proposed mitigations across the transportation network. The following figure shows a brief high-level process of DDOT's roll in Development Review and where the CTR fits into that process.

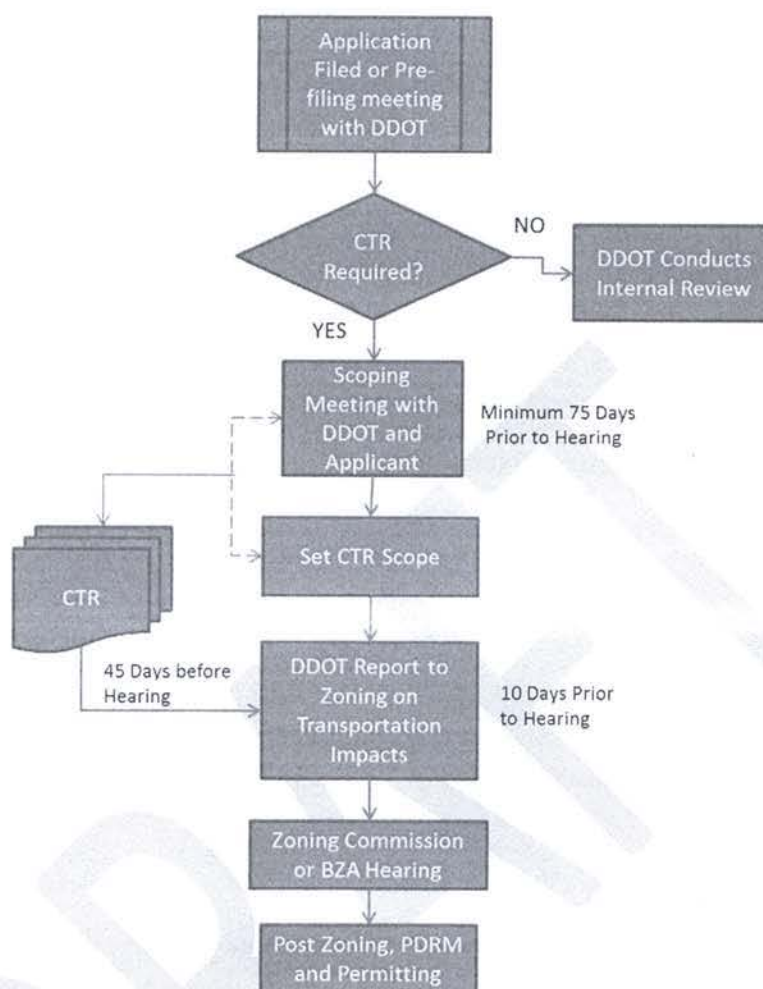


Figure 1: High Level Process Flow for DDOT Development Review

The Development Review process begins with the Applicant contacting DDOT's Policy, Planning & Sustainability Administration (PPSA) – informally or via a formal application to Zoning – to discuss general elements of proposed development. If the Case Manager determines that a CTR is required, then scoping meeting(s) between the Applicant and DDOT are required to determine the transportation study's parameters. Upon receipt of the completed CTR, DDOT will review and submit a report to the respective Zoning body detailing the CTR's adherence to the agreed upon scope as well as the proposed impact and mitigation strategies discussed within. Delivery of the CTR is required 45 days prior to hearing date; if the schedule is not adhered to by the applicant, DDOT will advise the Office of Zoning that deadlines have not been met and that the hearing should be postponed.

A Preliminary Design Review Meeting (PDRM) to assess the Applicant's adherence to Public Space design guidelines typically takes place after the zoning process. However, in complex cases, DDOT may recommend holding a PDRM prior the zoning hearing. Further information on the PDRM process is found in Appendix D.

2.2 When is a CTR Required?

The CTR scope shall be tailored to the scale and use of a proposed land development project. As such, a property owner whose project is expected to have few impacts would complete a more limited analysis (or even *no* analysis), whereas a property owner whose project is expected to have greater impacts would complete a more in-depth analysis. Accordingly, *it will not be necessary for every applicant to complete every task described in the CTR guidelines*. The Applicant and the DDOT Case Manager will coordinate to develop the scope of the CTR.

Determining whether or not a CTR is required begins with a discussion of the preliminary mode share assumptions. The Applicant (or a designated transportation consultant) will complete the table below and be prepared to discuss with DDOT the proposed development and basic assumptions that lead to the estimated mode split at the initial scoping meeting.

Mode Share	AM inbound	AM outbound	PM inbound	PM outbound
Vehicle	xx	xx	xx	xx
Bike	xx	xx	xx	xx
Walking\Transit	xx	xx	xx	xx

Based on the above filled-out table, generally DDOT will require a CTR:

Any time a development is forecast to generate more than fifty *person trips*¹ in the peak hour;

OR

Any time a development is forecast to generate a demand for more than 20 parking spaces;

OR

Any time a commercial development proposal exceeds 5,000 net new square feet;

OR

Any time a residential development proposal exceeds 20 net new units;

OR

Any time DDOT deems a site's characteristics to be unusual enough to warrant study;

OR

Any time current zoning regulations indicate that traffic study or analysis is necessary.

In addition to the above qualifiers, minimum CTR requirements exist for each mode, independent of the overall person trip generation. A more comprehensive review of each mode may be triggered, depending on the size of the project and/or number of trips generated. Likewise some modes may require no analysis in the CTR. For minimal CTR and trigger-based requirements for *vehicles* see Section 3.2; for *bicycle and pedestrians* see Section 3.3; and for *transit* see Section 3.4. In addition, TDM strategies and performance monitoring may be requested based upon the size of the development and proposed trip reduction assigned to the implementation of TDM strategies – see Sections 3.7 and 3.8 for further information. In coordination with DDOT staff, the Applicant shall define the precise scope of the CTR before any analysis is conducted. The following section details general CTR requirements for each travel mode.

¹ Person trips include vehicle trips, bike trips, and pedestrian/transit trips

3. CTR Requirements

A Comprehensive Transportation Review (CTR) consists of the evaluation of current and future transportation operations, the identification of impacts to transportation networks, and a plan to address impacts due the trips generated by the project. When evaluating an Applicant's CTR, DDOT's Development Review Branch has ten key focus areas: Strategic Planning Elements, Roadway Capacity & Operations, Bicycle & Pedestrian Facilities, Transit Service, Site Access & Loading, Parking, Safety, Streetscape & the Public Realm, Transportation Demand Management (TDM), and Performance Monitoring & Measurement. These ten key focus areas form the outline of the completed CTR.

Once DDOT has determined that a CTR is required, the Applicant meets with DDOT to address the scope of the CTR; its requirements; level of detail; data parameters and type of analysis, among other details. Prior to this meeting, the Applicant is required to fill out a **Scoping Form**, incorporated herein by **Attachment A**. The Applicant must submit the filled-out Scoping Form electronically to the Case Manager. This Scoping Form is simply a worksheet that references the guidelines for each of the 10 key focus areas, but also serves to document the agreed-upon scoping parameters.

Upon receipt of the completed Scoping Form, the DDOT Case Manager will then provide comments back to the Applicant for each of the 10 key focus areas and suggest any changes that need to be made. One or more follow-up meetings may be required between DDOT and the Applicant to resolve any differences in interpretation of the guidelines. Once the Applicant and DDOT agree on the scope, it is formalized, and the Applicant can then proceed with conducting the CTR.

CTR guidelines, minimum requirements, and triggers for a more comprehensive review, are provided below for each key focus area.

3.1 Strategic Planning Documents

The CTR will address how the proposed development considers the primary city-wide planning documents, as well as localized studies. It is important that the applicant reference any planning documents relating to both city-wide initiatives as well as more localized issues. Documents that reference these specific areas include but are not limited to The Comprehensive Plan, District of Columbia Small Area Plans, the DDOT Design and Engineering Manual, the Public Realm Design Manual, and Green Streets literature. Additional planning documents may be required for individual travel modes and for TDM implementations.

3.2 Roadway Network, Capacity & Operations

Minimum requirements exist for the CTR, regardless of the number of vehicle trips generated. These minimum requirements are detailed in Sections 3.2.1 and 3.2.2 and respectively include 1) showing the vehicle mode share, along with trip generation assumptions and reductions; and 2) showing existing and proposed vehicle site access. Analysis of the site's travel demand will serve to inform the delineation of the study area described in Task 2 and identify concerns with the site plan early in the review process. Evaluating the trip generation and distribution of the project should provide insight on the patterns of travel demand and thus inform the potential area of impact. Similarly, reviewing the site plan and access vehicle points should address any site specific concerns about the project as early in the process as possible.

While Section 2.2 details the general triggers for a CTR, further analysis may not be necessary beyond the two requirements above. Section 3.2.3 discusses details for a more comprehensive review of the vehicle trip impact on the roadway network.



3.2.1 Vehicle Trip Generation Assumptions

The Applicant shall describe the level of vehicle trip generation that would result from the project. In the following table, provide preliminary site-generated *vehicle* trips, based upon the preliminary mode split assumptions table from Section 2.2. Copy the table below into the Scoping Form Worksheet.

Time Period	In	Out	Total
Daily			
AM Peak Hour			
PM Peak Hour			
Weekend Peak Hour			

In addition, provide the assumptions and supporting documentation behind the proposed mode split, including all vehicle trip reductions (if applicable), for each land use, for:

- Transit.
- Biking.
- Pedestrian travel.
- Internal capture.
- TDM.
- Pass-by trips.

The Applicant shall evaluate how a development's proposed mode split corresponds to District policies limiting auto trip generation and to the travel demand character of the surrounding area. DDOT shall review the mode split for conformity with these commitments to ensure that the Applicant emphasizes the use of mass transit and other alternative modes. Projects utilizing demand control strategies or other TDM measures in the trip generation evaluation shall document these measures in the project's TDM plan to be outlined in a later task. All auto trip generation reductions due to demand management strategies must have documented evidence to verify their ability to reduce auto trips.

The Applicant can use ITE trip generation as a baseline only (and for calculating internal capture/synergy for mixed-use developments and pass-by percentages for retail establishments) but consider other approaches and studies and supplement them with U.S. Census data and/or [WMATA's Ridership Survey](#), as needed. Provide documentation for all assumptions. These preliminary estimates may be refined during the scoping process and are used for establishing triggers that determine the breadth of the CTR analysis.

3.2.2 Vehicle Site Access

The Applicant shall evaluate the project's site plan for potential impacts to public space and the broader transportation network. This evaluation shall include a review of access points and their interaction with other area transportation facilities as well as circulation on the site. If vehicle access is needed, at a minimum the CTR will provide locations of access point(s) and desired access controls (full, right-in/right-out, etc.). In the Scoping Form, provide the following:

- Existing and proposed access Location(s).
- Access Control.
- Existing Curb cuts utilized.
- Existing curb cuts abandoned.

- Proposed curb cuts.
- Curb cut width and radii.

Refer to the DDOT Design and Engineering Manual for allowable driveway locations, widths and curb radii and other parameters.

3.2.3 CTR Triggers for Further Vehicle Analysis

A CTR is expected to include further analysis of vehicle impacts if the proposed site generates 25 vehicle trips in the peak directions for either peak period, AM, PM, or weekend.

3.2.4 Development Scenarios

Typically, all studies will analyze the following scenarios:

- Existing Conditions - No build; current year.
- Background Conditions - with background developments and regional growth rates; anticipated build-out year.
- Total Future Conditions – Background Conditions plus the inclusion of the proposed development; anticipated build-out year of the development.

The future condition without construction should include approved projects that will generate trips within the study area and regional growth on any principal and minor arterials that traverse the study area. If the proposed development will be in stages, with significant trip generation for each stage, then each stage will be examined individually. The applicant must include the proposed build-out year for each stage.

3.2.5 Vehicle Study Area

The applicant shall identify a study area commensurate with the impact of the proposed project and the travel demand it will generate. Intersections which may be reasonably impacted by the project should be included in the study area. In general, this would include arterials and/or collectors providing access to the site as well as the local access streets. The length of the study area should generally extend along the corridors between arterials and/or major collectors. In addition to the procedures outlined below, engineering judgment should be utilized to identify a study area which includes the potential transportation impacts of a project. Additional intersections may be appropriate given the projected trip generation of the project in conjunction with the existing LOS of nearby intersections.

Ultimately, DDOT shall be the final determinant of the study area. At a minimum, the study area will include intersections where site impacts are most likely to occur, including:

- All site access points.
- Adjacent streets/intersections at the boundary of the site.
- The nearest potentially affected streets.

The applicant is encouraged to attach a Figure at the end of Scoping Form to illustrate the proposed vehicle study area intersections.

3.2.6 Vehicle Data Collection and Hours of Analysis

Turning Movement Counts (TMCs) are required for all intersections of the agreed-upon study area. TMCs are usually conducted from 7-10am and 4-7pm on a typical weekday (Tues/Wed/Thurs), when Congress and public schools are in session. Other hours/days may also be required for specific uses (retail, church, etc.). If the site currently generates traffic, all current site access driveways will be included in the TMCs. Other data collection may be necessary for other key focus areas (e.g. safety, bike/pedestrian trips, parking, etc.), depending on the size of the project. These data collections requirements will be discussed in subsequent sections. Further, a corridor analysis showing travel times may be necessary if the study area includes several closely-spaced intersections.

The Data Collection Plan presented in the Scoping Form should include a rationale/methodology for which data is collected and analyzed. All data should be presented in a manner which facilitates easy comprehension.

3.2.7 Roadway Improvements

The CTR will account for approved and funded roadway improvement projects within the study area that are expected to begin before the proposal's build-out year. Other planned unapproved improvements may be appropriate to include, as well. Applicant's traffic consultant will contact DDOT for all approved and funded roadway improvement projects that may have an impact on the roadways network's ability to accommodate vehicle trips.

3.2.8 Background Developments

The CTR will account for vehicle trips generated by developments in the study area that have an origin/destination within the study area. Typically, only approved/entitled developments are included in the list of background developments. Applicant's traffic consultant should contact DDOT for all planned developments that have vehicle trips originating within the study area. The DDOT Case Manager will have final say on which nearby projects will have a material impact on the study area.

3.2.9 Background Growth

The study will account for annual growth or decrease in through traffic on minor and principal arterials that pass through the proposed study area. Annual growth rates in vehicle trips can be approximated based on long term historical trends. An applicant will contact DDOT for historical data. In the Scoping Form Worksheet, provide an estimate on the annual vehicle traffic growth on arterials. DDOT Case Manager will have final say on the projected annual traffic growth on principal and minor arterials.

3.2.10 Site Trip Distribution & Assignment

In most cases, an Applicant should use the regional MWCOG transportation demand model to determine trip distribution and network assignment for project trips. For relatively large developments, utilizing the regional travel demand model is expected. However, for smaller developments using the MWCOG model may be less practical. If the applicant elects to develop an alternative distribution and assignment not based on the regional model, the applicant must inform and come to agreement with DDOT on the intended method of evaluating the distribution and assignment of trips. For analyses not utilizing the regional travel demand model, robust documentation is necessary to support the resulting assumptions. For smaller developments, trips generated by the site should be distributed throughout the study area network, based on one or more of the following:

- Existing count patterns.

- Prior studies of similar land uses near the site.
- Market studies.

Attach a proposed site distribution and assignment map at the end of Scoping Form.

3.2.11 Analysis Methodology

Capacity analyses are typically performed using Highway Capacity Manual (HCM) methodologies or utilizing industry recognized software. See Table 1 below for LOS thresholds. Any overall intersection or intersection approach Level of Service (LOS) that is shown at grade “F” will be highlighted in the study. Analysis will show LOS for existing, future year no-build, and future year build scenarios at all study approved intersections. In addition, the analysis will need to show the effects of mitigation on future year conditions, when proposed. For intersections with an LOS of F, 95% queue lengths will be shown for all approaches. If the study area includes several closely-spaced intersections along a corridor, than a corridor analysis showing travel times through the corridor will be required. Existing and Future travel time can be determined through a relevant software package. Existing travel time information can be verified via a “floating car” analysis. For unsignalized intersections that have a LOS D or worse, Applicant will provide a signal warrant analysis. If limited access roadway facilities will be impacted, transportation analysis shall demonstrate the following:

- Level of service and densities for mainline operations.
- Level of service and capacities for all merge, diverge, and weave sections.
- Queuing.
- Vehicle throughput.

Table 1: Motor vehicle LOS thresholds at signalized intersections+

LOS	Control Delay per Vehicle (seconds per vehicle)
A	≤ 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

In order to determine the transportation impacts of the proposed development project, the Applicant shall perform an analysis of future travel conditions *with* the proposed development and compare them to travel conditions *without* the proposed development. The analysis shall build on the trip generation, trip distribution, network assignment, and mode split evaluation and the influence of the proposed TDM plan. Utilizing these inputs, the analysis must forecast both opening year and long term future conditions, comparing build and no-build scenarios in order to assess impacts. If development facilities are to be opened in phases, each phase (inclusive of previous phases and related infrastructure improvements), shall be evaluated separately. However, it is important that the applicant present all assumptions for cumulative build-out of the project phases.



The applicant shall create an opening year travel demand forecast for the project study area. If necessary, multiple forecasts shall be created by project phase. Determining the baseline traffic conditions for a project's opening year typically involves the use of the MWCOG regional travel demand model and/or the application of growth assumptions to existing traffic conditions. The precise methodology for forecasting trips are finalized and defined at the project scoping meeting with DDOT. Specifically, the Applicant shall analyze at least the following scenarios:

- Existing Conditions.
- Opening Year Baseline: Traffic conditions without project (including planned area developments).
- Opening Year Baseline with proposed project (no mitigation).
- Opening Year Baseline with proposed project with mitigations (if proposed).

In addition, for large-scale projects (generating in excess of 500 trips in the peak hour), the Applicant shall also create a long-range travel forecast for the project study area. Both the methodology for determining long-range conditions and the horizon year should be agreed upon with DDOT. As with the opening year, the Applicant would typically use the MWCOG model and/or growth assumptions to establish a baseline for future traffic conditions. The baseline must include reasonable assumptions of future development and travel demand as well as capital improvements to transportation infrastructure.

3.2.12 Vehicle Trip Mitigation

Applicants will propose mitigations for all impacts their projects may create. Impacts shall be defined as the following:

- Increasing average vehicle delay at an intersection by more than five seconds.
- Degradation of LOS to F, due to the vehicle trips generated by the proposed project.
- Increasing 95% queue lengths in excess of 150 feet over the future background condition at any intersection approach.
- Site and access plan hostile to non-auto trips.
- Auto mode split higher than district goals.
- Increase in VMT/greenhouse gas emissions.

Proposed mitigation may take the form of geometry changes, facility upgrades, additional TDM elements, or other relevant measures. The mitigations shall be designed in sufficient detail for DDOT to evaluate their potential effectiveness. Proposed mitigation of vehicle impacts, if needed, must not add significant delay to other travel modes. Standard non-urban mitigation often includes geometric re-design which may not fit DDOT's practice of balancing safety and capacity across multiple transportation modes. If geometric changes are proposed, provide the impacts on other modes. Signal re-timing may not be practical, as DDOT operates many closely-spaced coordinated signals. If signal re-timing is proposed, provide queuing and capacity impacts along the entire coordinated corridor. In addition, provide effect of signal retiming on pedestrian crossing delay. All impacts that cannot or will not be mitigated should be clearly documented as such.

If, during construction, closing a lane on a minor or major arterial is needed, an applicant will also be required to develop a plan to mitigate impacts of project construction through DDOT's public space permitting process. At minimum, this plan must develop maintenance of traffic phasing concepts and Determine construction impacts on traffic and surrounding area. This information is provided for the Applicant's benefit only and is not required as part of the CTR.

3.3 Bicycle & Pedestrian Facilities

Because the CTR encompasses multimodal trip impacts, it will be required to analyze the impacts of the proposed development on the bicycling mode share. At a minimum, the CTR will show the proposed on-site pedestrian and bike accommodations, to include a description of access facilities for pedestrians and bicyclist and parking/storage locations for bicycles.

3.3.1 CTR Triggers for Comprehensive Review of Bike and Pedestrian Impacts

A CTR is expected to include further analysis of the bike and pedestrian network, if the proposed site includes one or more of the following:

- 200 or more residential units.
- 50,000 GFA of commercial/retail.
- Encompasses more than a typical small block-grid.
- 100 or more peak hour combined pedestrian and bike trips generated by site.

3.3.2 CTR Bike and Pedestrian Study Area

If further analysis of the bike and pedestrian networks is triggered, then the CTR will provide a map showing a walk-shed of one-quarter mile and bike-shed of one mile. These sheds will include pedestrian and bicycle access routes to the site from transit stops, metro station and other major generators.

3.3.3 Data Collection and Analysis of Bike Network and Pedestrian Facilities

Document the site plan's accommodation of bicycles, including any on-site bicycle pathways and short and long-term bicycle parking in private or public space. Document the number and location (indoor or outdoor) of bike racks meeting DDOT standards and whether a Capital Bikeshare station is proposed. Identify existing and proposed bicycle service to the site from trails and designated bikeways within the bike study area. Document the type, condition, and barriers or gaps in existing bicycle facilities within 2 miles of the site and identify locations of all CaBi stations. In addition, for sites larger than one city block, show internal bicycle circulation and connectivity. Request from DDOT historical incident data at major intersections in the bike study area. See DDOT's Bicycle Master Plan for more information on proposed routes and current plans. Request from DDOT all planned bike and pedestrian infrastructure improvements planned within the walkshed and bikeshed.

In addition to any DDOT planned infrastructure improvements, the CTR will show pedestrian infrastructure on and adjacent to the site, proposed by the Applicant. For sites that are larger than one city block, show *internal* pedestrian circulation and connectivity.

Data collection for pedestrian impacts will be both quantitative and qualitative. Quantitative Data collection includes pedestrian counts at all intersections along primary pedestrian routes within the ¼ mile study area, as well as all the vehicle study area intersections. Along major pedestrian corridors, collect pedestrian signal-related delay between site and major trip attractors, such as Metro Stations.

Qualitative documentation refers to physical condition of the pedestrian experiences within a ¼ radius of the site and along the major pedestrian corridors to nearby pedestrian generators, such major employment or residential centers or Metro Stations. Qualitative data collected include:

- Sidewalk widths (with tree boxes).
- Sidewalk condition, including any missing portions.
- ADA compliance at intersection ramps and bus stops.
- Pedestrian-scale lighting, if any.

- Area context (e.g. surrounding land use).

Analysis of the existing conditions of, and future impacts to, the bike and pedestrian networks will be quantitative and qualitative. The CTR will map the existing and projected pedestrian and bike trips along the respective routes within the study areas. This mapping will show changes in growth in these trips in conjunction with the measured deficiencies in width, lighting, and gaps and overall condition of the routes.

3.3.4 Mitigation for Impacts to the Pedestrian and Bike Network

Based on the mapping analysis of the pedestrian and bike networks, if deficiencies have been documented in the study area's pedestrian and bike facilities that would preclude the proposed mode split, then mitigation of these deficiencies is required. For facilities where a high concentration of conflicts may occur, a validated simulation which demonstrates reasonable operational functionality will be required. The results of these analyses should fit seamlessly with the documentation of non-empirical data to produce an existing conditions report analyzing travel conditions and recording the inadequacies of infrastructure. If the Applicant is proposing a Capital Bikeshare location, indicate, where on the site and the proposed number of docks. The CTR will document all proposed mitigation and its effect on delay for *other* modes.

3.4 Transit Service

Regardless of the size of the project, the CTR will show any bus/rail transit stops adjacent to the Site along with their respective peak hour headways and spans of service. The CTR will also show how visitors to the site access these stops.

3.4.1 CTR Triggers for Transit Mode Share

A CTR is expected to include further analysis of transit impacts, if the proposed site generates at least 50 transit trips or the transit mode split exceeds 30%.

3.4.2 CTR Transit Study Area

If further analysis of the Transit Network is triggered, then the study area will incorporate all transit stop within a reasonable walk of the site, defined here as a quarter-mile for bus or streetcar and one-half mile for heavy rail stations.

3.4.3 Data Collection and Analysis of Transit Network

The existing transit network shall be evaluated to determine its ability to serve the project adequately. The data collection effort will identify:

- Existing and proposed bus/streetcar stops within the ¼ mile study area that are proposed to serve the site.
- Headway and span of service for all routes with stops in the transit study area.
- The condition (ADA compliance, shelter, etc.) of all existing transit stops in the study area.
- The site plan's accommodation of transit service, including any changes to bus stops or other transit infrastructure necessary due to development will be included.
- Proposed new transit facilities, such as new stops and upgrades to existing stops.

The applicant should contact DDOT for planned changes and additions to the Circulator and Streetcar routes.

For larger developments or campus plans that generate over 30 peak hour bus\streetcar transit trips to any route that has headways greater than 20 minutes in the peak hour, the Applicant will identify existing capacity constraints for that route, to include:

- Number of peak hour stops.
- Existing peak hour boarding alighting.
- Existing bus/streetcar passenger occupancy rates.

The analysis for the transit mode share is to be performed qualitatively and must show the following:

1. Show that existing transit facilities are sufficient to accommodate new transit trips. Examples of insufficiency include:
 - a. No safe, lit, ADA compliant pathway from the site to existing stop.
 - b. Gaps in the sidewalk network connecting the site to the existing stop.
 - c. No shelter or bench at stop.
 - d. Insufficient sidewalk holding area for passengers boarding or alighting.
2. For larger plans and campus plans - as discussed above - validate that existing capacity is sufficient for the predicted trips generated by the proposed site.

3.4.4 Transit Trip Mitigation

Proposed mitigation of transit impacts will be needed if existing boarding plus new site-generated boardings exceed 100% of the seating capacity on existing bus/streetcar routes that have stops within the study area. In addition, if an analysis of existing plus proposed boardings shows more demand than a given stop can accommodate safely (e.g. overflow at a bus stop prevents pedestrian passage along sidewalk), then mitigation of the stop will be required. Examples of mitigation are wayfinding signage, real-time digital displays in bus shelters, additional benches and/or boarding area or providing power to an unwired shelter. See Table 3-1 of WMATA's *Design and Placement of Bus Stops* for a hierarchy of mitigation improvements. The applicant is expected to coordinate with both DDOT and WMATA. If gaps in the pedestrian network preclude the proposed mode split, then mitigation of these deficiencies is required (or the Applicant cannot assume the proposed mode split).

Further, if moving or consolidation of bus stops is proposed to facilitate the transit mode split, then coordination with DDOT and WMATA is required. Proposed mitigation will be documented in the final CTR.

3.5 Site Access Loading

At a minimum, the Applicant is required to show site access for vehicles, pedestrians and bicyclists. In addition, DDOT prefers that loading take place in private space and that no delivery truck back-up maneuvers take place in the public realm, whether in public space or in areas of private spaces accessible to the general public unless the Applicant can demonstrate a legitimate reason why this must occur. When it is determined that a new curb cut is necessary for site access or delivery, the applicant should first consider an alley. If an alley is not available, access from a side street is the next preferable option. Plans for new curb cuts need to demonstrate that they meet District standards, including sight distance. The CTR will show all loading and site access locations, along with their respective distances to the nearest intersection, alley or adjacent driveway. In addition, desired access control restrictions (e.g. no left turn, full-access, etc.) need to be identified.

3.5.1 Freight\Delivery

The CTR will identify existing and proposed commercial vehicle access to the site. The site plan's accommodation of freight and commercial delivery vehicles will be discussed including provisions for loading facilities in private space (loading docks or alleys), requests for curb cuts, or requests for public space to be allocated for commercial vehicle loading. The study will identify the type and size of delivery vehicles that will access the site and an estimate of the volume and frequency of commercial vehicle activity at the proposed development. The study will also identify the potential routes that commercial vehicles will use to and from the proposed development. Show all loading locations, including proposed curbside loading (and desired loading time restrictions, if any), on a site plan. Finally, the applicant will show the location of all delivery-vehicle turnaround movements.

3.5.2 Motorcoach

For developments that will generate significant tourist activity (hotels, museums, etc.) the study will discuss the site plan's accommodation of motorcoach access. This will include identifying areas for passenger unloading/loading (and desired loading time restrictions, if any), motorcoach parking, and the potential routes that commercial motorcoaches will use to and from the proposed development.

3.6 Parking

For developments with less than 40 parking spaces proposed and have a parking ratio greater than 0.5 spaces per unit, the CTR need only show the on-site parking spaces on a site plan and the proposed access point(s), as well as any proposed changes to the adjacent parking scheme.

For developments that add more than 40 off-street vehicle parking spaces, regardless of the proposed parking ratio, the Applicant will conduct the following data collection:

- Count adjacent supply and occupancy for on-street parking within a 5 minute walk.
 - Include associated parking schemes (RPP, 2-hour, restricted hours, etc.).
- Count adjacent supply and occupancy for off-street lots within a 5 minute walk.
- Show minimum required vehicles spaces per zoning;
 - If providing less parking than required by zoning, show why less parking is needed or show the effect that the proposed parking scheme will have on the on-street spill-over area. Further, any reduction in parking per zoning should be reflected in the proposed modal split.
- Include existing and proposed parking demand and supply estimates for bicycles
 - For proposed demand estimates, use data from comparable sites where possible.
 - Existing bicycle parking supply must include covered and un-covered bike racks and whether they meet DDOT standards.
 - Proposed on-site bike parking must at least meet the minimum of 5% of auto parking in retail/commercial uses and 1 per 3 residential units, per zoning.

The CTR will document any existing and future (with development) excess supply or demand for vehicle or bike parking. The CTR will document and proposed changed to on-street parking schemes in the 5 minute walkshed surrounding the site.

3.7 Transportation Demand Management (TDM)

The District of Columbia is committed to minimizing auto trip generation in pursuit of reduced roadway congestion, improved air quality, and neighborhood livability. The Applicant shall evaluate how a development's proposed mode split corresponds to City policies limiting auto trip generation and the

travel demand character of the surrounding area. DDOT shall review the mode split for conformity with these commitments to ensure that the Applicant emphasizes the use of mass transit and other alternative modes.

Projects utilizing demand control strategies or other TDM measures in the trip generation evaluation shall document these measures in the project's TDM plan. All auto trip generation reductions due to demand management strategies must have documented evidence to verify their ability to reduce auto trips. DDOT has produced a TDM reference booklet, *TDM in the Development Review Process*, for Applicant review and referral, referenced as Appendix B in this document.

In order to ensure that a development project maximizes efficiencies for the transportation system, the applicant shall produce a Transportation Demand Management Plan, which commits to TDM strategies and related monitoring practices.

3.7.1 Triggers for a TDM Plan

All developments are encouraged to produce TDM plans, regardless of size. However, the Applicant will produce a TDM plan for developments that are projected to generate in excess of 50 peak hour vehicle trips for any peak hour analysis period. In addition, projects that request variances from parking minimums in excess of 20 spaces or 10% of the zoning-required spaces, (including projects that have zero proposed on-site parking) would require a TDM Plan. The Incorporation of Transportation Demand Management into the Development Review Process document located on DDOT's website provides guidance. The proposed TDM plan will demonstrate how to facilitate a greater split between transportation modes.

Typically, the most important factors influencing commuter choice of single occupant driving are the price and convenience of parking. Increasing parking prices and/or reducing supply of on-site parking is one of the most effective strategies available to reduce reliance on single-occupant vehicles.

3.7.2 TDM Plan

This section should provide details of all TDM strategies that the applicant has committed to implementing, including a schedule for implementation and reporting commitments. Examples of TDM measures that leverage the District's multimodal transportation network include:

- Coordination with WMATA regarding incorporating real-time information about Metrorail and Metrobus operations into the applicant's transit information technology.
- Offer alternative commute incentives for students and employees, including:
 - Offer pre-tax payroll deduction to employees for both transit and bicycle expenses.
 - Partner with the Metropolitan Washington Council of Governments' (MWCOC) Commuter Connections ridesharing services, including formation of carpools and guaranteed ride home.
 - Purchase Metro SmarTrip cards for new students and employees each semester.
 - Subsidize approximately \$20-\$50 in transit expenses on a monthly basis, structured for compliance with federal tax guidelines, for employees who forgo a parking pass.
- Hire or designate staff member as the Transportation Management Coordinator to address the following:
 - Expand internal marketing efforts for alternative transportation options.
 - Maintain a Parking and Transportation website.
 - Coordinate the potential Transportation Management Association.

For further detailed alternatives, refer to DDOT's *TDM in the Development Review Process*, referenced as Appendix B in this document.

The TDM Plan shall serve as a stand-alone covenant, which includes the elements described in the following subtasks. The TDM plan may include elements of the site design which inherently reduce the demand for auto travel and may also be used as mitigation for impacts resulting from the project. In cases where proposed developments feature inherent TDM qualities or have negligible impacts on the transportation network by virtue of size or location, DDOT may waive the requirement for a TDM Plan.

3.8 Performance Monitoring & Measurement

To complement a TDM plan, DDOT requires that an Applicant compose a performance monitoring plan for any large scale development that generates in excess of 200 vehicle trips in any peak period (AM, PM or weekend). This will consist of the establishment of benchmark goals with regard to TDM measures, along with a commitment to increase TDM efforts should the Applicant fail to reach these goals. The monitoring methodology will at least include quantifiable site performance measures and suggest regular testing intervals. The applicant will include quantifiable site performance measures and suggest regular testing intervals that would be no more than one year apart.

The applicant will monitor resident/employee/visitor parking in adjacent off-site areas that would contribute to auto trip generation.

3.9 Safety

One element of the CTR will require a safety analysis to demonstrate that the site will not create or exacerbate existing safety issues for all modes of travel. The analysis shall include applicable elements of the *Highway Safety Manual* and consider at least typical geometry, traffic composition, traffic control, user demographics, and other local conditions. The analysis will also include three years of crash data for all modes for intersections within the roadway operations study area. In addition, any proposed alteration or re-purposing of the public space (e.g. a new curb cut, or driveway realignment, etc.) will require safety analysis to show:

- All relevant sight distances for exiting vehicles.
- Show how potential conflicts between pedestrians/bikes and vehicles will be minimized.

In addition, the Applicant will show where any of the following site features exist that result in a decreased safety, both as an existing site condition and as a proposed condition:

- Speed limits.
- Vehicle speeds.
- Road curvatures.
- Curb radii.
- Excessive grades.
- Sight distance issues – particularly at existing and proposed curb cuts.

3.10 Streetscape/Public Realm

DDOT expects new developments to rehabilitate streetscape infrastructure between the curb and property lines. The Applicant's intended use, as well as the intended access points, have an effect on a Streetscape design and layout. Accordingly, it is critical to reference DDOT's *Design and Engineering Manual* when developing conceptual plans for both site layout and corresponding streetscape design. The applicant must work closely with DDOT and OP to ensure that design of the public realm meets

current standards. DDOT adheres to strict design guidelines for sidewalk widths, pedestrian ramp locations, placement and type of trees, tree boxes and bike racks, among other features, that may need to be installed/replaced by the applicant in the process of rehabilitating the public realm.

Further, public space cannot be utilized to facilitate private business. Prohibitions of this type include, but are not limited to:

- Doors opening into the public space.
- Utility and parking vaults.
- Utilizing public space for vehicle ramps to access underground parking.
- Unpermitted outdoor seating.

Appendix C provides a quick reference for *do's* and *don'ts* with regard to DDOT's requirements in rebuilding streetscape.

The Applicant will reference the latest version of the Pedestrian Master Plan, Bicycle Master Plan, Design and Engineering Manual and DDOT's Tree-Related Standards and Specifications, as needed. In addition to the above, specific areas of the City may have additional, more stringent, design requirements.

The information provided in the Appendix C does not substitute for the Preliminary Design Review meeting (PDRM). Typically, PDRMs are scheduled after a Zoning Body has approved a development or variance/exception. If an Applicant has already received input from DDOT at a PDRM, this information should be incorporated into the site plans and highlighted as such. Appendix D provides a fact sheet for information related to scheduling and preparing for a PDRM.

APPENDIX A: CTR SCOPING WORKSHEET

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Project Name & Applicant Team:	
Case Type & No. (PUD, LTR, etc.)	
Street Address:	
Current Zoning and/or Overlay District:	
Date of Filing:	
Estimated Date of Hearing:	
Description of Project:	
1. Strategic Planning Elements (Planning Documents)	DDOT Comments/Action Items
<p>Planning Guidelines: The CTR will address how the proposed development considers the primary city-wide planning documents, as well as localized studies. See Section 3.1 of the CTR guidelines for more information.</p> <p>Proposed Documents:</p>	
2. Roadway Network, Capacity & Operations	DDOT Comments/Action Items
<p><u>Vehicle Trip Generation Assumptions</u></p> <p>Guidelines: Provide <i>preliminary</i> site-generated vehicle trips and mode split assumptions. In addition, provide the assumptions and supporting documentation behind the proposed mode split. See Section 3.2.1 of the CTR guidelines for further information.</p> <p>Proposed preliminary mode split and supporting documentation:</p>	
<p><u>Vehicle Site Access</u></p> <p>Guidelines: If vehicle access is needed, at a minimum the CTR will provide locations of access point(s) and desired access controls (full, right-in/right-out, etc.). See Section 3.2.2 of the CTR guidelines for any further requirements.</p> <p>Access Location(s): Access Control: Existing Curb cuts utilized: Existing curb cuts abandoned:</p>	



<p>Proposed curb cuts: Curb cut width and radii:</p>	
<p><u>CTR Triggers for further vehicle analysis (for sections below)</u> Guidelines: See Section 3.2.3 of the CTR guidelines to determine if a more comprehensive vehicle analysis is required. If so, completion of the remainder of the <i>Roadway Network, Capacity & Operation</i> section of the scoping form is required.</p>	
<p><u>Development Scenarios</u> Guidelines: See Section 3.2.4 of the CTR guidelines for discussion of the required development scenarios.</p> <p>Proposed Development Scenario:</p>	
<p><u>Vehicle Study Area</u> Guidelines: See Section 3.2.5 of the CTR guidelines for discussion of the study area.</p> <p>Proposed Study Area intersections, including access points (attach Figure at end of Scoping Form as needed):</p>	
<p><u>Data Collection and Hours of Analysis</u> Guidelines: See Section 3.2.6 of the CTR guidelines for discussion of the required data collection and hours of analysis.</p> <p>Proposed turning movement count intersections:</p>	
<p><u>Roadway Improvements</u> Guidelines: The study will account for approved and funded roadway improvement projects within the study area that are expected to begin before the proposal’s horizon year. See Section 3.2.7 of the CTR guidelines.</p> <p>Proposed roadway improvements:</p>	
<p><u>Background Developments</u> Guidelines: The study will account for vehicle trips generated by developments in the study area that have an origin/destination within the study area. See Section 3.2.8 of the CTR guidelines.</p> <p>Proposed background development:</p>	



<p><u>Background Growth</u> Guidelines: The study will account for annual growth or decrease in through traffic on minor and principal arterials that pass through the proposed study area. See Section 3.2.9 of the CTR guidelines.</p> <p>Proposed annual background growth:</p>	
<p><u>Site Trip Distribution & Assignment</u> Guidelines: Trips generated by the site will be distributed throughout the study area network. See Section 3.2.10 of the CTR guidelines for information in trip distribution and assignment.</p> <p>Proposed site distribution and assignment (attach Figures, as needed, at end of Scoping Form):</p>	
<p><u>Analysis Methodology</u> Guidelines: Capacity analyses are typically performed using Highway Capacity Manual (HCM) methodologies or a similar industry recognized software. See Section 3.2.11 of the CTR guidelines.</p> <p>Proposed analysis methodology:</p>	
<p><u>Vehicle Trip Mitigation</u> Guidelines: Proposed mitigation of vehicle impacts, if needed, must not add significant delay to other travel modes. Standard non-urban mitigation often includes geometric re-design which may not fit DDOT's practice of balancing safety and capacity across multiple transportation modes. See Section 3.2.12 of the CTR guidelines.</p> <p>For Informational purposes only. Mitigation will be documented in the final CTR. No information is required in the scoping form.</p>	
3. Bicycle & Pedestrian Facilities	DDOT Comments/Action Items
<p><u>CTR Triggers for bike and pedestrian mode share</u> Guidelines: A CTR is required to include some level analysis of the bike and pedestrian network at a minimum, based on several potential factors. See Section 3.3.1 of the CTR guidelines to determine if a more comprehensive analysis is required. If so, complete the remainder of the <i>Bicycle & Pedestrian Facilities</i> section of this scoping form.</p>	
<p><u>CTR Bike and Pedestrian Study area</u> Guidelines: See Section 3.3.2 of the CTR guidelines to determine bike and pedestrian study areas.</p> <p>Proposed bike and pedestrian study areas:</p>	



<p><u>Data Collection and Analysis of Bike Network and Facilities</u> Guidelines: See Section 3.3.3 of the CTR guidelines for data collection requirements and analysis for bike and pedestrian modes.</p> <p>Proposed Bike network and facilities analysis:</p>	
<p><u>Mitigation for Bike network</u> Guidelines: If deficiencies have been documented in the study area’s pedestrian or bike facilities that would preclude the proposed mode split, then mitigation of these deficiencies is required. See Section 3.3.4 of the CTR guidelines for mitigation requirements of the bike network.</p> <p>For Informational purposes only. Mitigation will be documented in the final CTR. No information required in scoping form.</p>	
<p>4. Transit Service</p>	<p>DDOT Comments/Action Items</p>
<p><u>CTR Triggers for transit mode share</u> Guidelines: A CTR is typically required to include some level analysis of the transit network, based on several potential factors. See Section 3.4.1 of the CTR guidelines to determine the minimum analysis requirements and if a more comprehensive transit analysis is required. If so, completion of the remainder of the <i>Transit Service</i> section of this scoping form is required. See Section 3.4.1 of the CTR guidelines</p>	
<p><u>CTR Transit study area</u> Guidelines: If further analysis of the transit network is triggered, see Section 3.4.2 of the CTR guidelines for determining the requisite study area.</p> <p>Proposed transit study area:</p>	
<p><u>Analysis of Transit Network</u> Guidelines: Analysis of the transit network will incorporate both a quantitative and qualitative review. See Section 3.4.3 of the CTR guidelines for further information.</p> <p>Proposed transit analysis:</p>	
<p><u>Transit Trip Mitigation</u> Guidelines: Proposed mitigation of transit impacts may be needed, given certain impacts to the network. See Section 3.4.4 of the CTR guidelines for more information.</p> <p>For Informational purposes only. Mitigation will be documented in the final CTR. No information is required in scoping form.</p>	
<p>5. Site Access and Loading</p>	<p>DDOT Comments/Action Items</p>



<p>Guidelines: At a minimum, the Applicant is required to show site access for vehicles, pedestrians and bicyclists. In addition, DDOT has additional policies for site access and loading as they relate to public space. See Section 3.5 of the CTR guidelines for additional information regarding these policies.</p> <p>Freight\Delivery The study will identify existing and proposed commercial vehicle access to the site. See Section 3.5.1 of the CTR guidelines.</p> <p>Motorcoach For developments that will generate significant tourist activity (hotels, museums, etc.) the study will discuss the site plan’s accommodation of motorcoach access. See Section 3.5.2 of the CTR guidelines.</p> <p>Proposed Loading Analysis:</p>	
<p>6. Parking</p>	<p>DDOT Comments/Action Items</p>
<p>Guidelines: Minimum requirements exist for documenting parking needs and constraints, regardless of development size. Further requirements may be needed for larger developments. See Section 3.6</p> <p>Proposed Parking Analysis:</p>	
<p>7. Transportation Demand Management</p>	<p>DDOT Comments/Action Items</p>
<p>Triggers for a TDM Plan Guidelines: All developments are encouraged to produce TDM plans, regardless of size. See Section 3.7</p> <p>Proposed TDM Plan:</p>	
<p>8. Performance Monitoring & Measurement</p>	<p>DDOT Comments/Action Items</p>
<p>Guidelines: Developments of a certain size may need to incorporate a performance monitoring element as a condition of zoning approval. See Section 3.8 of the CTR guidelines for more information.</p> <p>For informational purposes only. Requirements for performance monitoring will be coordinated with the DDOT case manager.</p>	
<p>9. Safety</p>	<p>DDOT Comments/Action Items</p>
<p>Guidelines: The CTR will demonstrate that the site will not create or exacerbate existing safety issues for all modes of travel. See Section 3.9 of the CTR guidelines for further information.</p>	



<p>Proposed Safety Analysis:</p>	
<p>10. Streetscape/Public Realm</p>	<p>DDOT Comments/Action Items</p>
<p>Guidelines: DDOT expects new developments to rehabilitate streetscape infrastructure between the curb and property lines. The applicant must work closely with DDOT and OP to ensure that design of the public realm meets current standards. See Section 3.10 of the CTR guidelines for direction on streetscape rehabilitation.</p> <p>These guidelines are provided to inform that public realm design standards may alter an Applicant’s intended use of public space.</p>	

Information/Data Requests (List requested data from DDOT after each field below):

- District planning documents:
- Local planning documents, including small area plans:
- Information on programmed and/or funded roadway improvements in study area:
- Studies for background developments in study area:
- Signal Timings:
- Crash Data:

Proposed Schedule:

- DDOT comments on Scoping Document:
- Transportation Consultant/Applicant responses to comments:
- Phase I Completion:
- Phase II Completion:
- Submission of Report to DDOT:
- Zoning Commission or BZA Hearing Date:

Attach any Figures, Tables, and Appendices here:



APPENDIX B: DDOT's TDM in the Development Review Process

[Work in Progress – Contact assigned Case Manager for further information]

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APPENDIX C: STREETScape FACTSHEET

DDOT requires new developments to rehabilitate streetscape infrastructure between the curb and property lines. DDOT adheres to strict design guidelines for its right of way and the rehabilitation the public realm. The applicant must work closely with DDOT and OP to ensure that design of the public realm meets current standards and reference the latest version of the Public Realm Manual, Pedestrian Master Plan, Bicycle Master Plan, Design and Engineering Manual and DDOT's Tree-Related Standards and Specifications, as needed. In addition, specific areas of the City may have additional, more stringent, design requirements. Since the design of the public space is complements the site design and building design, DDOT has include some basic elements that are frequently overlooked:

Sidewalk width

Minimum Sidewalk width is a function of adjacent land use and density. Please reference section 31.2 of the DDOT *Design and Engineering Manual*.

Utilization of Public Realm for Private Business

Public space cannot be utilized to facilitate private business. Prohibitions of this type include, but are not limited to:

- Doors opening into the public space,
- Utility and parking vaults
- Utilizing public space for vehicle ramps to access underground parking.

Bike Parking

DDOT has standards for type, location and spacing of bike parking located in the public space. Reference the DDOT *Design and Engineering Manual* or contact PPSA or the Case Manager for the latest standards.

Tree Boxes

Tree boxes are required to be a minimum of 4' wide but 6' is preferable. In the event that available public space constrains either sidewalk width, or tree box width, then minimum sidewalk width must be maintained first.

Driveway Location and Curb Radii

All driveways must be flush with the grade of the sidewalk when crossing the entire sidewalk area. No driveway entrance or exit on any roadway shall be closer than 60' to a roadway intersection. The edge lines of any driveway shall be located a minimum of 32' from the edge line of any adjacent driveway or alley, so as to provide room for at least one curb tree. The edge line of any driveway shall not be located closer than 16' to the centerline of an existing healthy curb tree.

The curb return radius for driveways will be:

- Street intersection: 15 ft.
- Alleys: 10 ft.
- Driveways: 6 ft.

Refer to Chapter 31 of the DDOT Design and Engineering Manual for further information.



APPENDIX D: PRELIMINARY DESIGN REVIEW MEETING (PDRM) FACTSHEET

[Work in Progress – Contact assigned Case Manager or PDRM Coordinator for further information]

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