

DEVELOPMENT REVIEW IN THE DISTRICT OF COLUMBIA: TRANSITIONING FROM A TRADITIONAL TRAFFIC IMPACT STUDY TO COMPREHENSIVE MULTI-MODAL TRANSPORTATION REVIEW

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1 **ABSTRACT**

2 As part of the District Department of Transportation's (DDOT) vision and commitment to more
3 sustainable travel practices, safer streets and access to goods and services, DDOT evaluates the
4 effect of public and private development proposals that come before the District's Office of
5 Zoning. Previously, this evaluation focused largely on automobile impacts on the District's
6 roadway network. Given the high percentage non-auto commuting trips, along with an extensive
7 capital and operational investment in the District's comprehensive transportation infrastructure,
8 DDOT has transitioned to a new multimodal paradigm for evaluating a development's impacts.

9 To meet multi-modal strategic objectives in the District's Comprehensive Plan, DDOT
10 has transitioned to a structured model for evaluating transportation impacts and potential
11 mitigation across all travel modes. This model is built upon new comprehensive transportation
12 review guidelines, which replace the traditional traffic impact study and provide a standardized
13 process to a developer, delineating the method of collecting and analyzing data in support of
14 their project in order to be in compliance with DDOT policies. In addition, the new guidelines
15 provide a process for the interpretation of data, allowing DDOT to develop opinions and
16 recommendations to a zoning body on a development's impacts. Further, a new set of
17 standardized forms and reporting documents ensure consistent and structured interaction among
18 DDOT, developers, and zoning bodies, throughout the zoning process from project inception
19 through permitting.

20

21 Key Words: Development Review, Transportation Impact Study, Multimodal, Zoning

22

1 INTRODUCTION

2 As the agency responsible for the comprehensive transportation network and public right-of-way
3 within the District of Columbia, the District Department of Transportation (DDOT) is committed
4 to delivering more sustainable travel practices, safer streets, and access to goods and services. To
5 this end, DDOT evaluates public and private development proposals that come before the
6 District of Columbia Office of Zoning to ensure that proposed alterations and impacts to the
7 transportation network are consistent with transportation policies and practices and do not
8 adversely impact multi-modal strategic objectives and the Transportation Element of the
9 Comprehensive Plan (1). DDOT's review process provides consistent transportation and land
10 use space policy guidance that transparently and systematically administers the agency's policy
11 framework when evaluating transportation impacts. DDOT conveys its evaluation of impacts
12 through public reporting and testimony to the two main zoning bodies - the DC Zoning
13 Commission and the DC Board of Zoning Adjustment.

14 Prior development review practice was predicated solely on the impact of vehicular
15 traffic on the District's roadway network. Similarly, thresholds for triggering a traffic impact
16 study (TIS) were based primarily on a proposed project's automobile trip generation. This
17 threshold for analysis does not reflect the District's mode share or residents' car ownership rates,
18 nor does it reflect the District's vision and financial commitment to building a multimodal
19 transportation network. A focus on automobile impact and mitigation comes at the expense of
20 investments made in other modes of transportation that compete for the same shared space. The
21 District's recent population growth has expedited the need for a multimodal approach.
22 According to the US Census Bureau, the District has added approximately 50,000 residents from
23 2000 through July of 2011. This demand has resulted in an increase in development around
24 Metro stations, where residents and commuters are far less likely to rely on personal
25 automobiles.

26 To better reflect existing travel modes, investment, and policy, DDOT has transitioned
27 away from a traditional TIS to the Comprehensive Transportation Review (CTR) – a structured
28 review process that 1) evaluates transportation across all travel modes; 2) provides a structured
29 consistent methodology for administering policy; 3) improves certainty and transparency for
30 developers and community stakeholders; and 4) provides public space policy that emphasizes the
31 need for safety for non-auto travel. As part of its new evaluation paradigm, DDOT has
32 developed guidelines for drafting and reviewing the CTR. The following sections discuss
33 previous auto-based development review guidelines; new multimodal CTR guidelines; and new
34 development review process and procedures that have been implemented to provide a
35 comprehensive project review from zoning application through to public space permitting.

36 PRIOR DDOT PROCESS FOR TRAFFIC IMPACT ANALYSIS

37 Development review has typically been guided by the *DDOT Design and Engineering Manual*
38 (DEM), specifically Chapter 45, which provided the guidelines for standardized reviews of TIS
39 for development projects. According to the manual, DDOT has the review/approval capacity to
40 ensure that provisions of the District's zoning and subdivision regulations are followed. To
41 accomplish this "... a Traffic Impact Study (TIS) may be required from the applicant to quantify
42 impacts and identify facility improvements needed to maintain an acceptable level of service
43 standards" (2). Generally, a TIS will be required with all land use zoning and rezoning requests
44 included in the preliminary planning stage. Per the manual, the requirement to prepare a TIS
45 may be waived if the following conditions are met:

- 1 • Daily trip generation is less than 300 vehicles.
- 2 • Peak hour trips in the peak direction are less than 25 vehicles.
- 3 • No more than 250 vehicles per day access an existing collector or local road.

4
5 Per the DEM, responsibility for conducting the TIS lay with the landowner or land
6 development applicant, with DDOT providing review. Once it had been determined that a TIS
7 was needed, DDOT was required to determine the level of detail for the study area of impact
8 analysis, the intersections to be studied in detail, the distribution of trips from the proposed
9 development, the background traffic volume forecasts, and the need for any special analysis. A
10 TIS was required to evaluate the following criteria (2):

- 11 • Background traffic condition;
- 12 • Generalized peak hour traffic volume and turning movements;
- 13 • Peak hour Level of Service (LOS), where “D” is the minimum acceptable LOS;
- 14 • Appropriateness of ingress and egress locations and volumes;
- 15 • Potential need for future traffic signals;
- 16 • Location and requirements of turn lane acceleration/deceleration lanes;
- 17 • Turn lane storage recommendations;
- 18 • Sight distance evaluations and recommendations (intersection, stopping, passing);
- 19 • Recommended traffic control devices for intersections;
- 20 • Signal and 4-way stop control warrants;
- 21 • Link volumes for all major streets showing average weekday traffic volume;
- 22 • Signage changes;
- 23 • Safety and accident analysis;
- 24 • A before and after comparison of traffic impact in different measures of effectiveness;
- 25 • Assessment and evaluation of potential improvements required for the project.
- 26 • Multimodal and transportation demand management opportunities;
- 27 • Pedestrian/bicycle requirements and/or improvements.

28
29 The last two criteria were recent updates to the DEM, setting the foundation for further
30 expansion into a multimodal collection effort and review and analyzing mitigation effects on
31 other modes.

32 According to the DEM, “...each planning horizon analysis shall identify the required
33 facilities needed to bring the LOS of the affected facilities up to District of Columbia established
34 standards” (2). If the standards were exceeded, the study would need to identify mitigations
35 needed to reach established standards; what portions of those improvements result from the
36 proposed project; improvements needed to offset project impacts; and additional amenities
37 provided by the proposed project. Required information in the TIS included a detailed
38 description of the site and traffic impacts, existing and proposed land uses in the vicinity of the
39 site, a map detailing the “planned” surface transportation network for the short term and long
40 term planning horizons, existing and future traffic conditions with and without the proposed
41 project, any special analysis or issues such as residential quality of life or pedestrian safety and
42 mitigation measures and recommendations.

1 **LIMITATIONS OF THE PREVIOUS REVIEW PROCESS**

2 The previous impact review methodology was heavily biased towards analysis of automobile
3 traffic, leading to several conflicts with existing DDOT policy and District commuter mode
4 splits. Auto-based triggers for conducting a TIS, and the analysis itself, neglected to show the
5 impact of a development on pedestrian, bike and transit networks – counter to the District’s
6 vision, sustainability objectives, and transportation policy. In addition, traditional auto-based
7 mitigations were often implemented at the expense of increased delay to other travel modes.
8 Further, the District continues to invest substantial funds in the construction, operation and
9 expansion of non-auto transportation infrastructure, leading to increasing non-auto mode split.
10 This increased reliance on non-auto transport, has resulted in a need for DDOT to alter its
11 development review processes and procedures.

12 **Auto-centric Triggers for Impact Study and Analysis**

13 The current mode split, for District residents, according to the US Census’ 2010 American
14 Community Survey (ACS), is:

- 15 • 41% automobile
- 16 • 39% public transportation (heavy rail, bus)
- 17 • 12% walk
- 18 • 3% bike
- 19 • 5% work from home

20
21 In addition, the ACS showed that 37% of District households do not own an automobile. These
22 data point to a clear need to incorporate other modes into the thresholds for triggering a
23 transportation review, as well as the analysis of the review itself.

24 **Constraints to Traditional Vehicle Impact Mitigation**

25 Limited right of way (ROW) exists in the District for traditional automobile mitigation
26 improvements. Most buildings in the District – particularly in areas that have a high number of
27 pedestrians, bicyclists and transit users – are built abutting the public space ROW line.
28 Accordingly, traditional suburban traffic mitigation strategies, like lane widening, come at the
29 expense of the remaining public realm that is often dedicated to non-auto modes [bus shelters,
30 bike lanes, sidewalk, green spaces, etc.]. For example, lane widening may alleviate auto
31 congestion at an intersection, but also reduce pedestrian safety. Similarly, mitigation of auto
32 impacts did not address delay on other modes. Depending on the existing mode split for a given
33 area, mitigation for a new development could *increase* overall person-delay by attempting to
34 reduce delay for auto trips. To address these constraints in the development review process,
35 DDOT has developed a framework that emphasizes a multimodal approach for mitigating the
36 effects of any given travel mode.

37 **Multi-modal Infrastructure Improvements**

38 In addition to maintaining its roadway and signal networks, the District invests heavily in the
39 infrastructure of multiple travel modes. Pedestrian investments include sidewalk, landscaping,
40 hardscape, trees, and lighting improvements. DDOT operates a local Circulator bus system, and
41 the District, in conjunction with regional partners, contributes operating costs for the regional
42 public transportation system’s bus and heavy rail networks. Bicycle investments include an
43 expanding network of trails, bike lanes, parking, and a bike-sharing system. Finally, the District
44 is further expanding the transportation options by re-introducing a streetcar network. These

1 investments show a commitment to building out a multimodal transportation network that
2 provides transportation choices for District residents.

3 In addition, many of the Districts new developments and proposals have been large-scale
4 mixed-use projects that have an urban design. These projects are centered around Metro stations
5 and other public transportation nodes. The mixed-use quality of new developments and their
6 reliance on public transportation result in the need to adopt a new development review model, as
7 the suburban evaluation model no longer applies.

8 In summary, the process for triggering and conducting development review did not
9 reflect current residents' commuting practices and needs, nor was it reflective of the District's
10 investment in a multimodal transportation network or its recent development pattern.
11 Accordingly, DDOT has transitioned away from the traditional suburban/rural TIS approach to a
12 *comprehensive* and *multimodal* review of development impacts across the entire transportation
13 network.

14 **CREATION OF A MULTIMODAL APPROACH TO IMPACT ANALYSIS**

15 In order to conduct evaluations of proposed developments within a multimodal context, DDOT
16 has incorporated the following changes to its development review process:

- 17 1. Introduced standardized forms that document communication and correspondence
18 between developers, DDOT and zoning bodies.
- 19 2. Created an external-facing *Development Review Procedures Manual*, available to
20 developers and DDOT reviewers, that details the requirements of both parties for each step in the
21 review process.
- 22 3. Standardized the development review input to the public space permitting process.
23 Because most developments in the District are constructed up to the ROW line, an understanding
24 of the integration of public space (under DDOT purview) and private space is critical during the
25 design phase of a development, which often overlaps Development Review process.
- 26 4. Creation of new *Comprehensive Transportation Review (CTR) Guidelines* to replace the
27 traditional TIS (3).

28
29 Introduction of the CTR transforms the traditional approach of conducting development review
30 by replacing a long-standing, auto-based TIS methodology with a new multimodal approach.

31 **Comprehensive Transportation Review (CTR) Guidelines**

32 While the CTR replaces the TIS, the purpose of the review is still retained: determine the need
33 for an impact review; determine the data to collect in support of the impact; analyze the data; and
34 determine the outcome of the analysis warrants mitigation, as well as its form. A CTR must
35 identify *all* additional trips a proposed development would bring to the area. A CTR must also
36 describe how these additional trips will impact the transportation system; propose actions that
37 would mitigate the impacts; and show how the proposed mitigations affect other transportation
38 modes. The requisite depth of the CTR is determined as part of a traditional scoping process and
39 is based largely upon the proposed development, surrounding land use, and existing and planned
40 transportation infrastructure.

41 *Thresholds for Requiring a CTR*

42 Generally, a developer will be required to conduct the CTR using the guidelines as a reference.
43 The CTR's content, including all supporting data, becomes the principle document by which
44 DDOT will base its evaluation of impacts and proposed mitigations as it forms a response to the

1 zoning bodies. The CTR scope (parameters of data collection and study areas) is tailored to the
2 scale and use of a proposed land development project. Accordingly, a property owner whose
3 project is expected to have few impacts, as determined through the scoping process, would
4 complete a more limited analysis – or even *no* analysis – whereas a property owner whose
5 project is expected to have greater impacts would complete a more in-depth analysis.

6 Similar to a traditional TIS, the determination of whether or not a CTR is required begins
7 with a discussion of the preliminary trip generation and mode share assumptions. However, in
8 place of automobile trips, the CTR utilizes *person-trips* as criteria for triggering a CTR. Where a
9 TIS may rely on ITE trip generation rates to determine a preliminary estimate for a
10 development's auto trip generation, DDOT requires the applicant to provide preliminary
11 estimates across all modes – bike, pedestrian and automobile (transit trips are folded into
12 “pedestrian” trips for the purpose of a preliminary estimation of person trips).

13 Generally, DDOT requires a CTR under the following thresholds:

- 14 • If a development is forecast to generate more than fifty *person trips* in the peak hour;
- 15 • If a development generates 25 vehicles in the peak period.
- 16 • If a development is forecast to generate a demand for more than 20 parking spaces;
- 17 • If a commercial development proposal exceeds 5,000 net new square feet;
- 18 • If a residential development proposal exceeds 20 net new units;
- 19 • If DDOT deems a site's characteristics to be unusual enough to warrant study; and/or
- 20 • If current zoning regulations indicate that traffic study or analysis is necessary.

21
22 DDOT's thresholds are set lower than those found in suburban jurisdictions, as the District has a
23 higher density of intersections and more closely-spaced traffic signals that are reliant on
24 coordination. Accordingly, the District's network is more sensitive to small incremental
25 increases in trips.

26 In addition to the above triggers, minimum CTR thresholds exist for each mode,
27 independent of the overall person trip generation. A more comprehensive analysis of a particular
28 mode may be triggered depending on the size of the project and/or number of trips generated.
29 Likewise, some modes may require no analysis in the CTR.

30 *Ten Key Focus Areas*

31 As part of the development of the CTR guidelines, DDOT established ten key focus areas that
32 are relevant to a multimodal transportation network. The following focus areas are integrated
33 throughout the development review process from scoping to analysis to mitigation, and form the
34 basis for DDOT's review and final report to zoning:

- 35 1. Strategic Planning Elements;
- 36 2. Roadway Capacity & Operations;
- 37 3. Bicycle & Pedestrian Facilities;
- 38 4. Transit Service;
- 39 5. Site Access & Loading;
- 40 6. Parking;
- 41 7. Safety;
- 42 8. Streetscape & the Public Realm;
- 43 9. Transportation Demand Management;
- 44 10. Performance Monitoring & Measurement.

1 An analysis built around these ten focus areas differentiate a District-required CTR from a
2 traditional TIS and are explained in detail as follows:

3
4 **Strategic Planning Elements** The District establishes transportation policy in a variety of
5 planning documents including the Comprehensive Plan, Small Area Plans, Transportation Master
6 Plans, Corridor Plans, and Livability Studies. CTR guidelines require developers to address how
7 the proposed development references the primary city-wide planning documents, as well as
8 localized area-specific planning studies and documents.

9
10 **Roadway Capacity and Operations** Previously, analyzing the roadway network was the main
11 role of a TIS; in the new CTR, it is given similar weight as other modes. Minimum roadway
12 impact review requirements exist, regardless of the number of auto trips a development
13 generates. These minimum requirements include showing:

- 14 • Vehicle mode split estimation, along with preliminary trip generation assumptions and
15 trip reductions (internal capture, pass-by trips, transit reductions, etc.)
- 16 • Existing and proposed automobile site access.

17
18 As part of the standard scoping process, a preliminary analysis by DDOT of this information
19 delineates the study area and identifies conflicts between the site plan and DDOT policy early in
20 the review process. It also determines if, and to what extent, a CTR is needed. A CTR is
21 expected to include further analysis of automobile impacts if the proposed site generates 25 auto
22 trips in the peak directions for either peak period in the AM, PM, or weekend.

23 Many elements of the auto impact assessment associated with the traditional TIS are included
24 in the new CTR. For example, the proposed study area, development scenario (existing
25 conditions, background/no-build conditions, and future build-out conditions) and analysis
26 methodology (Highway Capacity Manual) remain the same. Similarly, methodologies for
27 estimating distribution and assignment from the previous traffic impacts study methodology have
28 been maintained.

29 Roadway network analysis improvements in the CTR from the previous TIS relate to: 1) trip
30 generation estimation; and 2) mitigation strategies for auto impacts. Similar to a traditional
31 traffic impact estimation methodology, a developer can begin with the *ITE Trip Generation*
32 *Manual* (and for calculating internal capture and pass-by percentages). However, the ITE
33 manual is now used as a baseline estimate *only*, and a developer must consider other approaches
34 and case studies, U.S. Census data, and/or the Washington Metropolitan Transportation
35 Authority (WMATA) Ridership Survey, as needed, to supplement the ITE trip generation with
36 reduction factors for other non-auto modes (4). In addition, a developer can refer to case studies
37 – trip generation counts from existing similar developments. Trip generation estimates that rely
38 on utilizing demand control strategies or other TDM measures in the trip generation evaluation
39 are now required to document these measures in a project's TDM plan. All automobile trip
40 generation reductions due to demand management strategies require documented evidence to
41 verify their ability to reduce auto trips.

42 Similar to the previous TIS methodology, an analysis of automobile impacts is required
43 to show LOS for existing, future year no-build, and future year build scenarios at all study
44 approved intersections. Additionally, 95% queue lengths need to be shown for all approaches at
45 intersections with an LOS "F." If mitigation is proposed, the CTR must indicate the changes in

1 LOS and delay at all study area intersections and approaches between total future year condition,
2 with and without mitigation.

3 Per the CTR, developers are required to propose mitigation strategies for all impacts their
4 projects generate. The CTR defines impacts as the following:

- 5 • Increasing average automobile delay at an intersection by more than five seconds.
- 6 • Degradation of LOS to F, due to the automobile trips generated by the proposed project.
- 7 • Increasing 95% queue lengths in excess of 150 feet over the future background condition
8 at any intersection approach.
- 9 • Site and access plans deemed non-complementary to, or inadequate for, non-auto trips.
- 10 • Auto mode split higher than DDOT goals.

11
12 Proposed mitigation of impacts to the roadway network may take the form of geometric changes,
13 facility upgrades, additional TDM elements, or other relevant measures. However, standard non-
14 urban mitigation often includes geometric re-design, which may not fit DDOT's practice of
15 balancing safety and capacity across multiple transportation modes. Proposed mitigation of
16 automobile impacts must not add significant delay, or decrease safety, for other travel modes. If
17 geometric changes are proposed, the CTR is required to show the impacts on delay and safety to
18 other modes. Similarly, signal timing modifications to relieve automobile congestion, must not
19 significantly increase pedestrian crossing delay. If auto trip mitigation is not possible without
20 contributing to the delay and safety of other modes or without conflicting with DDOT policy or
21 planning documents, then a developer is required reduce auto trips to a point where mitigation is
22 not needed. The CTR *Guidelines* offer several options for trip reduction – primarily through a
23 reduction in proposed on-site parking supply and/or incorporating a suite of TDM measures that
24 incentivize non-auto travel.

25
26 **Safety** The District has a limited right of way where multiple modes often compete for the same
27 shared space. Accordingly, evaluating the safety impacts of a development is critical for a
28 comprehensive review. For a CTR, DDOT requires that a developer conduct a safety analysis to
29 demonstrate that a proposed development will not create or exacerbate existing safety issues for
30 all modes of travel. The analysis shall include applicable elements of the Highway Safety
31 Manual and consider at least typical geometry, traffic composition, traffic control, user
32 demographics, and other local conditions. Per the CTR, analysis may include, but is not limited
33 to, the evaluation of:

- 34 • Vertical and horizontal sight distance limitations.
- 35 • Pedestrian and bicycle safety challenges.
- 36 • Vehicle crash patterns in areas where high speed regional facilities intersect slower speed
37 local facilities.
- 38 • Truck routing and access plans leading to safety challenges.
- 39 • Conflicts between streetcars, cyclists, pedestrians and automobiles.
- 40 • Parking related safety issues.
- 41 • ADA compliance.

42
43 A developer is not unilaterally responsible for improving an existing safety condition.
44 However, the CTR now requires that, if pedestrian, bike or automobile exposure is substantially
45 increased in any area where a safety deficiency has been documented, then a developer must
46 provide partial mitigation of the issue, so as not to significantly exacerbate an existing condition.

1 Each safety mitigation case is evaluated on its own merit, and DDOT has the absolute authority
2 to mitigate any safety related issue irrespective of what has been proposed by a developer.

3
4 **Bicycle and Pedestrian Facilities** As part of a CTR's multimodal approach to evaluating a
5 development, it is a requirement to analyze a proposed impact on the bicycling and pedestrian
6 transportation systems. At a minimum, the CTR requires a developer to outline proposed on-site
7 pedestrian and bicycle accommodations, with a description of access facilities for pedestrians
8 and bicyclists, and parking/storage locations for bicycles. A CTR will include a more in-depth
9 analysis of impacts to the bike and pedestrian network, if the proposed development includes one
10 or more of the following thresholds:

- 11 • 200 or more residential units.
- 12 • 50,000 square feet of gross floor area of commercial/retail.
- 13 • Encompasses at least one block in a small block-grid.
- 14 • 100 or more peak hour combined pedestrian and bike trips generated by site.

15
16 If further analysis of the bike and pedestrian networks is triggered, then a CTR must
17 include a map showing a walk-shed of one-half mile and bikeshed of approximately one mile.
18 The walkshed and bikeshed will map pedestrian and bicycle access routes to the site from transit
19 stops, heavy rail stations and other major trip generators. The CTR must also identify existing
20 and proposed bicycle routes to the site from trails and designated bikeways within the bike study
21 area, and document the type, condition, and barriers or gaps in existing bicycle facilities within
22 the bikeshed. For developments larger than one city block, the CTR will also be required to
23 show bicycle and pedestrian connections within a development.

24 Data collection for the bike and pedestrian portion of the CTR is both quantitative and
25 qualitative. Quantitative data collection includes pedestrian and bike counts at all intersections
26 along primary routes, as well as all the automobile study area intersections. Along major
27 pedestrian corridors, the CTR requires the collection of pedestrian signal-related delay between a
28 proposed development and major trip attractors, such as metro stations.

29 Qualitative documentation captures the quality of the pedestrian experience within a
30 quarter mile radius of the site and along the major pedestrian corridors to nearby pedestrian
31 generators, such as major employment or residential centers or Metro stations. Data collected
32 include:

- 33 • Sidewalk width and condition, to include any missing segments.
- 34 • ADA compliance at intersection ramps and bus stops.
- 35 • Pedestrian-scale lighting, if any.
- 36 • Area context (e.g. surrounding land use).

37
38 Analysis of the quantitative and qualitative pedestrian and bike data includes an
39 evaluation of the existing conditions; measuring existing and future demand; comparing demand
40 with available infrastructure; and measuring deficiencies in the network and routing (insufficient
41 width, poor lighting, gaps in the infrastructure, etc.) that would prevent the site from generating
42 the presumed pedestrian or bicycle mode split. If deficiencies have been documented in the
43 study area's pedestrian and bike facilities that would preclude the proposed mode split, then
44 mitigation of these deficiencies is required. Mitigation for bike and pedestrian facilities can
45 include, but is not limited to, eliminating gaps in pedestrian and bike networks; increasing the
46 width, safety, lighting condition or ADA compliance of a sidewalk network; or installing a

1 bikesharing station if DDOT determines a station is needed. Similar to the auto trip analysis, the
2 CTR will document all proposed mitigations and their effect on delay and safety of other modes.

3
4 **Transit Service** DDOT practice is to leverage its operating subsidy to WMATA to increase the
5 share of non-automobile travel modes.

6 Accordingly, the CTR must evaluate how trip generation is distributed across multiple public
7 transit networks. At a minimum, a CTR will show any bus/rail transit stops adjacent to proposed
8 developments, including associated accessibility of these stops from the site.

9 A CTR is required to include a more in-depth analysis of transit impacts, when the
10 proposed site generates at least 50 transit trips or the transit mode split exceeds 30%. If further
11 analysis of the transit network is triggered, then all transit stops within quarter-mile for bus or
12 streetcar and a half-mile for heavy rail are included. As part of the data collection and analysis,
13 the ability of the transit network to serve the project adequately will need to be evaluated. The
14 data collection effort for further analysis identifies:

- 15 • Existing and proposed bus/streetcar stops within the quarter-mile study area.
- 16 • Existing heavy rail stations within one-half mile of the site.
- 17 • Headway and span of service for all routes with stops in the transit study area.
- 18 • The condition (ADA compliance, shelter, etc.) of all existing transit stops in the study
19 area.
- 20 • The site plan's accommodation of transit service, including any changes or additions to
21 bus stops or other transit infrastructure necessary due to development.

22
23 For large developments or campus plans that generate over 30 peak hour bus/streetcar transit
24 trips to any one route that has headways greater than 15 minutes in the peak hour, a developer is
25 required to identify existing capacity constraints for that route. This includes:

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

29
30 The analysis for the transit mode share is also to be performed qualitatively and must show that
31 sufficient transit facilities exist to accommodate new transit trips. Examples of deficiencies that
32 could preclude a high transit mode split include:

- 33 5. Unsafe, dark, non-ADA compliant pathways from the site to an existing transit stop in the
34 quarter-mile radius.
- 35 6. Gaps in the sidewalk network connecting the site to the existing stop.
- 36 7. No shelter or bench at stop.
- 37 8. Insufficient shelter capacity.
- 38 9. Insufficient sidewalk holding area for passengers boarding or alighting.

39
40 Transit mitigation will be necessary if existing peak hour boarding plus new site-
41 generated boardings exceed 100% of the seating capacity on existing bus/streetcar routes that
42 have stops within the study area. In addition, if an analysis of existing boardings and proposed
43 boardings shows more demand than a given stop can accommodate safely (e.g. overflow at a bus
44 stop prevents pedestrian passage along sidewalk), then mitigation of the stop will be required.
45 Examples of mitigation are wayfinding signage, real-time digital displays in bus shelters,
46 additional benches and/or boarding area or providing power to an unwired shelter. If gaps in the

1 pedestrian network preclude the proposed mode split, then mitigation of these deficiencies is
2 required. Proposed mitigation will be documented in the final CTR. If mitigation is needed but
3 not proposed, the transit mode split will not be accepted by DDOT.
4

5 **Site Access and Loading** Site access and loading are critical elements of a development, as they
6 represent the overlap areas between public space, controlled by DDOT, and an owner's private
7 property. An owner's intended site access and loading arrangement may conflict with DDOT's
8 public space policy. Accordingly, for a CTR, site access for vehicles, pedestrians and bicyclists
9 is required to be shown, at a minimum. Further, DDOT policy is that loading take place in
10 private space and that no delivery truck back-up maneuvers take place in the public realm -
11 whether in public space or in areas of private spaces accessible to the general public - unless a
12 legitimate reason can be provided. The CTR is therefore required to show all loading and site
13 access locations, together with their respective distances to the nearest intersection, alley or
14 adjacent driveway. In addition, proposed access control restrictions are to be identified. The
15 CTR must include any plans for new curb cuts and the rationale for any non-compliance with
16 DDOT curb cut policy.

17 The CTR is required to identify existing and proposed commercial vehicle access to the
18 site and to identify the type and size of delivery vehicles and an estimate of the volume and
19 frequency of commercial vehicle activity. The CTR will also identify potential commercial
20 vehicle routes and show all loading locations, including proposed curbside loading and desired
21 loading time restrictions.

22 For developments that generate significant tourist activity (hotels, museums, etc.), the
23 CTR is required to discuss the site plan's accommodation of motorcoach access. This will
24 include identifying areas for passenger unloading/loading (and desired loading time restrictions,
25 if any), motorcoach parking, and the potential routes that commercial motorcoaches will use to
26 and from the proposed development.
27

28 **Parking** The overall parking demand created by a development is primarily a function of land
29 use, development square footage and the price/supply of provided parking spaces. The amount of
30 parking provided should complement the estimated auto mode split. As part of the CTR, a
31 developer is required to ensure that the site is not over-parked or under-parked. For
32 developments with less than 40 parking spaces proposed and have a parking ratio greater
33 than 0.5 spaces per unit (or one space per 1750 ft² for retail/office/commercial/hotel), the CTR
34 need only show the on-site parking spaces and the proposed access point(s), as well as any
35 proposed changes to the adjacent parking scheme.

36 For developments that add more than 40 off-street vehicle parking spaces, regardless of
37 the proposed parking ratio, the CTR requires a developer to collect the following data:

- 38 • Adjacent supply and occupancy for on-street parking within a 5 minute walk.
 - 39 • Adjacent parking schemes.
 - 40 • Adjacent supply and occupancy for off-street lots within a 5 minute walk.
 - 41 • Minimum required vehicles spaces, per zoning.
- 42

43 If less parking is being provided than required by zoning, the CTR is required to show
44 why fewer spaces are needed and to show the effect that the proposed parking plan will have on
45 the availability of local on-street spaces. Further, any reduction in parking from zoning-

1 minimums is to be reflected in the proposed modal split. The CTR will document any proposed
2 changes to on-street parking programs in the five-minute walkshed surrounding the site.

3
4 **Streetscape/Public Realm** No explicit data collection or analysis is required in this section of
5 the CTR. Rather, the design of the streetscape and public realm has elements that overlap other
6 strategic focus areas, such as transit, pedestrian access, biking, site access, parking, etc. The
7 Developer's intended use, as well as the intended site access points, have an effect on a
8 streetscape design and layout. Accordingly, it is critical to reference DDOT's *Design and*
9 *Engineering Manual* and *Public Realm Handbook* when developing conceptual plans for both
10 site layout and corresponding streetscape design. For the CTR, the Developer will reference the
11 latest versions of the Pedestrian Master Plan, Bicycle Master Plan, Design and Engineering
12 Manual and DDOT's Tree Standards and Specifications, as they relate to intended uses of the
13 public realm by visitors and residents of the proposed development. Beyond these documents,
14 specific areas of the City may have additional, more stringent, design requirements.

15 Further, DDOT does not allow public space to be utilized to facilitate private business.
16 Prohibitions of this type include, but are not limited to:

- 17 • Doors opening into the public ROW.
- 18 • Utility and parking vaults located in the sidewalk or pedestrian clear zone.
- 19 • Utilizing public space for ramps to access underground parking.
- 20 • Unpermitted outdoor seating.

21
22 If the above DDOT restrictions conflict with a developer's intended use of public space,
23 these conflicts need to be documented in the CTR. Resolution need not be part of the CTR, as
24 public space permitting happens *after* a development receives zoning approval. However, by
25 incorporating Streetscaping and Public Realm needs into the CTR, the developer provides time
26 for resolution of any conflict between DDOT policy and a development's need for public space.

27
28 **Transportation Demand Management** Transportation Demand Management (TDM) is a set of
29 strategies, programs, services and physical elements that influence travel behavior to maximize
30 the use of mass transit, bicycle and pedestrian facilities, and reduce single occupancy vehicle
31 trips during peak periods. Because TDM strategies have an effect on the viability of a proposed
32 mode split, TDM plans are required to be incorporated into a CTR. All developments are
33 encouraged to produce TDM plans, regardless of size. However, only developments that
34 generate in excess of 50 peak hour auto trips for any peak hour analysis period are required to
35 produce a TDM plan for the CTR. In addition, projects that request variances from parking
36 minimums in excess of 20 spaces or 10% of the zoning-required spaces, (including projects that
37 have zero proposed on-site parking) require a TDM plan. Developments utilizing demand
38 control strategies or other TDM measures in the trip generation evaluation shall document these
39 measures in the project's TDM plan. All auto trip generation reductions due to demand
40 management strategies must have documented evidence to verify their ability to reduce auto
41 trips.

42 The CTR provides details of all TDM strategies that a development's owner has committed
43 to implementing, including a schedule for implementation and reporting commitments.
44 Examples of TDM measures that leverage the District's multimodal transportation network
45 include (5):

- 1 • Incorporating real-time information about Metrorail and Metrobus operations into the
2 applicant's transit information technology.
- 3 • Offering alternative commute incentives, including pre-tax payroll deduction to
4 employees for both transit and bicycle expenses; coordinating ridesharing services; and
5 subsidizing transit expenses.
- 6 • Hiring or designate staff member as the Transportation Management Coordinator to
7 address internal marketing managing on-site parking prices and supply.

8
9 **Performance Monitoring and Measuring** To complement a TDM plan for any large scale
10 development that generates in excess of 200 auto trips in any peak period, DDOT requires that a
11 developer provide a performance monitoring plan in the CTR. The monitoring plan consists of
12 the establishment of benchmark goals with regard to TDM measures. The benchmark goals
13 should align with the estimated trip generation and modal split. Further, the monitoring plan
14 must be accompanied by a commitment to increase TDM efforts should the initial monitoring
15 fail to achieve the predicted reduction in automobile trips. The monitoring methodology will
16 include quantifiable performance measures and suggest regular testing intervals, no more than
17 one year apart. Consistent monitoring of transportation impacts will ensure a developer
18 adequately follows the proposed TDM plan and that any new development produces a minimal
19 impact to the comprehensive transportation network.

20 **NEW DEVELOPMENT PROCESSES AND PROCEDURES**

21 While the CTR is the document that guides the data collection and analysis supporting DDOT's
22 development review, other recent procedures have been standardized to make the overall review
23 process more uniform, consistent and efficient and to provide certainty for developers and
24 transparency for all stakeholders. One such change is in the incorporation of a *Development*
25 *Review Procedures Manual (6)*. This document allows both the development review team and a
26 developer to follow each step of the process, allowing for an efficient and transparent review.

27 The procedures manual outlines the current development review process which consists
28 of four distinct successive phases. The first phase begins with initial meeting between DDOT
29 and a developer and ends with an agreed-upon scope for a CTR, if one is required. The second
30 phase includes submission of the CTR by an Applicant, submission of a corresponding DDOT
31 report to zoning bodies, and concludes with the public zoning Hearing. The third phase
32 comprises the collection of all DDOT recommendations along with zoning order requirements,
33 in order to aid and expedite the public space permitting process. Finally, phase four consists of
34 monitoring of both construction in public space and of trip generation, if required by the Public
35 Space Committee or by the zoning order. The documents and detailed steps outlined in the
36 Procedures Manual give more structure and predictability to the development review process

37 **Standardized Forms**

38 In addition to a procedures manual, DDOT created multiple standard forms that become part of
39 the public review record and document correspondence between DDOT, the developer, and the
40 zoning body. The following standardized forms/documents are utilized throughout the
41 development review process:

- 42 • The *Initial Applicant Letter* is the initial contact from DDOT to a developer, providing
43 the Case Manager contact information and whether or not a CTR can be anticipated.

- 1 • The *Scoping Form* is utilized to document the parameters of the data collection effort and
2 analysis of a CTR, if one is required.
- 3 • The *Case Scorecard* refers to an internal memorandum that documents major case issues,
4 potential resolution, action items and relevant dates.
- 5 • The *Curb Cut Letter* refers to a letter from DDOT to a developer stating DDOT's
6 opposition to a proposed location and/or access control. Curb cut locations are often the critical
7 first step in site layout and building design. Accordingly, the letter documents DDOT position
8 on a proposed curb cut location early in the development review process.
- 9 • The *DDOT Report* refers to the report that DDOT writes to the zoning body,
10 documenting DDOT opinion on the strategic focus areas, as they relate to a proposed
11 development's impact on the transportation network.
- 12 • The *Public Space Handover Memo* refers to the internal document given to the Public
13 Space Committee and the Permits departments, highlighting DDOT recommendations and
14 Zoning Order requirements, as they relate to public space elements.

15
16 In conjunction with the Procedures Manual and CTR guidelines, these standardized documents
17 allow for a predictable, structured and transparent development review process.

18 **FUTURE CONSIDERATIONS**

19 DDOT intends to continue incorporating updates and refinements to the CTR guidelines in
20 response to changes in District commuter mode split and/or changes in public transportation
21 policy. In addition, DDOT is evaluating other potential improvements:

- 22 • Developing multimodal trip generation rates specific to the District of Columbia.
- 23 • Improving processes for performance monitoring and measuring TDM effectiveness.
- 24 • Incorporating Development Review fees

25
26 DDOT foresees the need for the creation of District-specific trip generation rates. Through the
27 evaluation of development review projects, the District has received numerous impact studies
28 that cite existing District developments' trip generation; these case studies, once incorporated
29 into a large enough database and supplemented with additional land use data, form the
30 foundation for the creation of a District-specific trip generation manual that can eliminate the
31 reliance on the ITE Trip Generation Manual, trip reduction factors, internal capture estimates,
32 among many other assumptions.

33 DDOT's performance monitoring process is currently in a *Beta* stage. As DDOT
34 compiles increasing numbers of performance monitoring reports, the procedures and parameters
35 for data collection can be refined to properly evaluate the effectiveness of specific TDM
36 measures in context with other factors such as local area land use and existing infrastructure
37 constraints. This refinement will allow DDOT to recommend the best TDM strategies for
38 reducing automobile trips, for any given area.

39 DDOT may also explore incorporating developer review fees. These fees can be applied
40 directly to the cost borne by the District to scope a development impact study and then
41 subsequently review and report upon it to zoning. Alternatively, development review fees can be
42 applied directly toward third party review, where scoping an impact study and conducting a
43 review is performed externally, in lieu of a developer hiring a traffic consultant directly.

1 CONCLUSIONS

2 For the purpose of reviewing proposed developments for impact on the transportation network,
3 DDOT has transitioned away from the traditional auto-centric TIS to a comprehensive approach,
4 incorporating a review of all travel modes. To further meet the multimodal strategic objectives
5 of the District's Comprehensive Plan, DDOT has created a structured process for evaluating
6 transportation impacts and potential mitigation. This process is built upon new CTR guidelines,
7 whose ten focus areas reflect the multimodal nature of current District travel patterns. The CTR
8 guidelines provide direction to a developer on how to collect and analyze data in support of their
9 project in order to be in compliance with DDOT policies. In addition, the new guidelines
10 provide a process for interpretation of data by DDOT in order to provide opinions and
11 recommendations, consistent with DDOT policy and practice, to a zoning body on a
12 development's impacts. The CTR will be updated as needed with changes to the commuter split
13 and/or District transportation policy. Finally, a new set of standardized forms will ensure
14 consistent and structured interaction between DDOT, developers, and zoning bodies.

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19

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