

**METROPOLITAN GOVERNMENT  
OF  
NASHVILLE AND DAVIDSON COUNTY**



***NASHVILLE DEPARTMENT of TRANSPORTATION  
& MULTIMODAL INFRASTRUCTURE***

**Volume 1:  
Pre-Construction  
Project Development  
Manual**

**2021 EDITION**

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Reviewed by Chief Engineer

Date

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Approved by NDOT Director

Date



## Table of Contents

ACRONYM LIST ..... vi

EXECUTIVE SUMMARY ..... 1

    Document Owner/Updates..... 1

1. CIP PROJECT PLANNING/SCOPING ..... 2

2. DESIGN REQUIREMENTS ..... 3

    2.1. Equitable and Economical Design ..... 4

3. CONSULTANT SELECTION ..... 5

    3.1 For Metro Funded Projects ..... 5

    3.2 For State/Federally Funded Projects..... 5

    3.3 Consultant Performance Evaluation ..... 7

4. PROJECT ADMINISTRATION ..... 9

    4.1. Schedule ..... 9

    4.2. Project Files ..... 10

    4.3. Meeting Minutes and Meeting Notes ..... 10

    4.4. Design Documentation..... 11

    4.5. Marking of Underground Facilities..... 11

    4.6. Quality Control/Quality Assurance ..... 11

    4.7. Plans Submittal..... 12

    4.8. Linear Transportation as it relates to Metro MS4 NPDES Permit Compliance (via Metro Grading Permit plan review and issuance process)..... 12

5. PROJECT SCOPING AND KICK-OFF ..... 14

    5.1. Project Scoping..... 14

    5.2. Project Kick-off ..... 14

    5.3. Kick-off Meeting: NDOT Responsibilities ..... 14

    5.4. Kick-off Meeting: Consultant Responsibilities ..... 15

6. CONCEPT PHASE..... 16

    6.1. Concept Report ..... 16

        6.1.1. Concept Layout ..... 16

        6.1.2. Alternatives Analysis ..... 16

        6.1.3. Traffic Study ..... 17



- 6.1.4. Concept Construction Cost Estimates ..... 17
- 6.1.5. Environmental Review/NEPA ..... 17
- 6.2. Concepts Requiring Metro Council Approval ..... 18
- 6.3. Concept Meeting ..... 18
- 6.4. Consultant Deliverables Summary ..... 19
- 7. PUBLIC INVOLVEMENT ..... 20
  - 7.1. Public Information Open Houses (PIOH) ..... 22
  - 7.2. NDOT Responsibilities ..... 22
  - 7.3. Consultant Deliverables ..... 23
- 8. SURVEY AND GIS DATA PREPARATION ..... 24
  - 8.1. Consultant Deliverables ..... 24
- 9. UTILITY AND RAILROAD COORDINATION ..... 26
  - 9.1. Early Utility Notification ..... 26
  - 9.2. Early Utility Submittals ..... 27
    - 9.2.1. Utility Relocation Plans ..... 27
    - 9.2.2. Utility Coordination Meeting & Final Utility Plan Revisions ..... 28
  - 9.3. Consultant Responsibilities & Deliverables ..... 30
- 10.0 PERMITS ..... 31
  - 10.1 Tree Removals for Linear Transportation Projects ..... 32
  - 10.2 Ecology ..... 32
  - 10.4 Water Quality Permits ..... 33
  - 10.5 Stormwater Grading Permit Coverage ..... 33
  - 10.6 Class V Injection Well (Sinkhole) Permits ..... 34
  - 10.7 Encroachment Permits/License Agreements ..... 34
  - 10.8 Railroad Agreements ..... 35
- 11. PRELIMINARY PLANS ..... 36
  - 11.1 Erosion Control Plans ..... 37
  - 11.2 Quality Assurance/Quality Control ..... 37
    - Consultant Deliverables ..... 38
  - 11.3 ..... 38
- 12. RIGHT-OF-WAY PLANS ..... 39
  - 12.1 Consultant Deliverables ..... 39
    - 12.1.1. Right-of-Way Plans ..... 39
    - 12.1.2. ROW Staking ..... 39



12.1.3. ROW Revisions ..... 39

12.2 ROW Acquisition ..... 40

12.2.1 ROW Acquisition Approval ..... 40

12.2.2 Legal Descriptions and Exhibits ..... 41

12.2.3 Compliance Requirements ..... 41

12.2.4 ROW Acquisition Notifications ..... 41

12.2.5 Appraisals & Review Appraisals ..... 42

12.2.6 ROW Staking ..... 42

12.2.7 Negotiations ..... 43

12.2.8 Closings & Recordings ..... 44

12.2.9 Condemnations & Settlements ..... 44

12.3 GIS Update ..... 45

13. FINAL CONSTRUCTION PLANS ..... 46

13.1 Final Construction Plan Field Review ..... 46

13.1.1. Consultant Deliverables ..... 47

13.2 Constructability Review ..... 47

13.2.1. Consultant Deliverables ..... 47

13.3 Final Construction Plans (Bid Set) ..... 48

14. CONSTRUCTION ..... 49

15. MISCELLANEOUS PROJECT RELATED SERVICES ..... 50

16. PROJECT CLOSEOUT ..... 51

16.1 Pre-Construction Closeout ..... 51

16.2 Construction Closeout ..... 52

17. STREET DESIGN GUIDELINES ..... 53

17.1 Water and Sewer Locations within Right-of-Way ..... 53

17.2 Working Protocol Between NDOT and Metro Nashville School District ..... 53

17.3 Right-of-Way Monumentation by Construction Contractors ..... 54

17.3.1. Right-of-Way Markers ..... 54

17.3.2. Documentation of Compliance ..... 54

APPENDICES ..... 56

Appendix 1.A – Example Capital Planning Report

Appendix 2.A – Equity in Design Form

Appendix 3.A – Solicitation Request Form

Appendix 3.B – EBO Cost Breakdown





Appendix 3.C – TDOT LPDO Work Order Assignment Evaluation Form

Appendix 3.D – TDOT Deposit Request Letter

Appendix 3.E – Consultant Performance Evaluation

Appendix 5.A – Example Metro Invoice Template and Instructions

Appendix 5.B – Sample Survey Notification Letter

Appendix 6.A – Concept Report

Appendix 6.B – Cost Estimate Contingencies

Appendix 10.A – Grading Permit Application Checklist

Appendix 11.A – Roadway Design Checklist

Appendix 12.A – ROW Ordinance

Appendix 12.B – Legislative and Mandatory Referral Processes

Appendix 13.A – Pre-Bid Checklist

Appendix 13.B – Constructability Review Checklist



## ACRONYM LIST

AASHTO	American Association of State Highway Transportation Officials
ADA	Americans with Disabilities Act of 1990
A/E	Architecture and Engineering
ALTA	American Land Title Association
APWA	American Public Works Association
ARAP	Aquatic Resource Alteration Permit
CADD	Computer-Aided Drafting and Design
CE	Categorical Exclusion
CEI	Construction Engineering Inspector
CFR	Code of Federal Regulations
CFMS	Capital Funds Management System
CFPR	Construction Field Plan Review
CIB	Capital Improvement Budget
CPR	Capital Planning Report
CSP	Capital Spending Plan
EA	Environmental Assessment
EBO	Equal Business Opportunity
EFT	Electronic Funds Transfer
EIS	Environmental Impact Study
EPSC	Erosion Prevention and Sediment Control
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
IDIQ	Indefinite Delivery/Indefinite Quantity
ITS	Intelligent Transportation System
LGGM	Local Government Guidelines Manual
LGIP	Local Government Investment Pool
LPDO	Local Programs Development Office (TDOT)
LOS	Level of Service
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MUTCD	Manual of Uniform Traffic Control Devices
MWS	Metro Water Services
NACTO	National Association of City Transportation Officials
NEPA	National Environmental Policy Act
NDOT	Nashville Department of Transportation and Multimodal Infrastructure
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NTP	Notice to Proceed



### ACRONYMS LIST

NWP	National Water and Power
PFPR	Preliminary Field Plan Review
PIOH	Public Information Open Houses
PO	Purchase Order
PROWAG	Public Right-of-Way Accessibility Guidelines
PS&E	Plans, Specifications, and Estimates
ROD	Registrar of Deeds
ROW	Right-of-Way
QA	Quality Assurance
QC	Quality Control
QHP	Qualified Hydrologic Professional
SBV	Stream Buffer Variance
SCM	Stormwater Control Measure
SIA	State Industrial Access
SMM	Stormwater Management Manual
SOW	Scope of Work
SRF	Solicitation Request Form
SWPPP	Storm Water Pollution Prevention Plan
TCA	Tennessee Code Annotated
TIP	Transportation Improvement Program
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
TVA	Tennessee Valley Authority
USACE	United States Army Corp of Engineers
USC	United States Code
USFW	United States Fish and Wildlife
USNMAS	United States National Map Accuracy Standards
USPAP	Uniform Standards of Professional Appraisal Practice



## EXECUTIVE SUMMARY

This document defines the preferred engineering procedures of the Metropolitan Government of Nashville & Davidson County Department of Transportation and Multimodal Infrastructure (Nashville DOT or NDOT) and is a stand-alone document for that purpose. Each project shall have its own separate needs and criteria that may require more or less effort than defined in this document. The procedures of this manual provide guidelines by which the NDOT staff and Consultants can perform professional services in the administration and management of each contract. The Chief Engineer and the Program Process Manager will provide the necessary overview and supervision for compliance with the procedures contained herein. It is the role of the Consultant's Project Manager (referred to as the Consultant) and NDOT's Project Manager (referred to as the Project Manager) to clearly define the deliverables and special project needs in the scoping, negotiations, and contracting phases of the project and to specifically detail alterations to the deliverables identified in this document.

Although some procedures are the same as the Tennessee Department of Transportation's (TDOT), this manual is intended to define the internal processes and procedures for use on Metro, state and federally funded projects. State and federally funded projects that are locally managed in which the TDOT Local Programs Development Office (LPDO) has oversight, shall be completed following the TDOT Local Government Guidelines Manual (LGGM).

Any project that has one cent of federal funds in any phase, federalizes the entire project and will be subject to compliance with federal rules and regulations, and must follow the LGGM for all phases to avoid the loss of federal funds for the project.

### Document Owner/Updates

This manual is owned and updated by the Update Team, Chief Engineer or a designee at least every two years. While the Chief Engineer is responsible for updates, certain sections of this volume will require coordination with other Metro departments. Interim updates to individual sections and additions to the manual may be done on an as-needed basis and distributed to users of the manual. These interim updates will be saved by the Update Team to be incorporated into the complete update of the manual.



## 1. CIP PROJECT PLANNING/SCOPING

The scope of a Capital Improvement Project (CIP) should already be defined prior to submitting the project for inclusion in the annual Capital Improvement Budget (CIB). CIP scoping should be a joint effort between the different NDOT departments in the DOT lead by the Transportation Planning Department. A consultant may be used to perform or assist the Transportation Planning Department with this effort. See Section 2.0 Consultant Selection Process.

For each recommended CIP project, a Capital Planning Report (CPR) should be produced to define the details of the projects, identify the potential impacts, and provide a realistic budget to complete the project from conception to project closeout. At a minimum, the CPR should include:

- Project purpose and need
- History and background
- Existing conditions
- Standard typical section and complete street requirements for the road's classification
- Analysis of alternatives including but not limited to:
  - traffic studies
  - potential alignment changes
  - typical section variations
  - environmental, right-of-way, and utility impacts
- Functional layouts
- Project Cost Estimates
- Public Involvement (when necessary)

Once final, the CPR should be approved by the Transportation Planning Director and the Chief Engineer. See Appendix 1.A for an example CPR.

CPRs are not required by TDOT for locally managed State/Federal projects but can be helpful in defining and budgeting for projects seeking State/Federal funds to be included in the Nashville Metropolitan Planning Organization's (MPO) 25 year Regional Transportation Plan and the five (5) year Transportation Improvement Plan (TIP), and for determining eligible projects for various State/Federal grant opportunities.

Not all projects submitted in the CIB get included in a Metro Council approved Capital Spending Plan (CSP). Only projects included in the approved CSP for NDOT will be developed into an NDOT project. The project or selected alternative defined in the CPR will be used to develop the consultant scope of services needed to develop a biddable set of construction plans and to acquire environmental and construction permits, and right-of-way easements.



## 2. DESIGN REQUIREMENTS

The consultant shall be familiar with local, state and, federal guidelines while performing professional design services for NDOT and shall perform all work and produce all plans in accordance to the guidelines. Where applicable, Metro standards, details and guidelines shall take precedence unless stated otherwise to meet state/federal requirements. The guidelines shall include but not limited to the following:

- American Association of State Highway and Transportation Officials' (AASHTO) "A Policy on Geometric Design of Highways and Streets", current edition
- Standards adopted by AASHTO and approved by the Secretary of Commerce, as provided by Title 23, United States Code, Section 109(b),
- AASHTO "Roadside Design Guide"
- AASHTO "Guidelines for Geometric Design of Very-Low Volume Local Roads (ADT  $\leq$  400)"
- AASHTO "Standard Specification for Highway Bridges"
- AASHTO "Guide Specifications for Horizontally Curved Steel Girders – Highway Bridges"
- AASHTO "Standard Specifications for Structural Supports for Highway Signs, and Luminaires and Traffic Signals"
- AASHTO "Guide Specifications for Design and Construction of Segmental Concrete Bridges"
- AASHTO "Roadway Lighting Design Guide"
- AASHTO "Construction Manual for Highway Construction"
- National Park Services, Federal Highway Administration, and Federal Transit Administration procedures and compliance measures
- Transportation Research Board's "Highway Capacity Manual"
- Federal Highway Administration's "Manual on Uniform Traffic Control Devices" (MUTCD)
- National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide
- U.S. Access Board's Public Rights of Way Accessibility Guidelines (PROWAG)
- American Public Works Association's "Uniform Color Code for Utilities"
- TDOT Standard Specifications for Road and Bridge Construction (*latest edition*)
- TDOT Drainage Manual
- TDOT Multimodal Scoping Manual
- TDOT Survey Standards
- TDOT Standard General Notes
- Metro's Design Guidelines for Complete Streets
- Metro's Traffic Impact Study Threshold and Guidelines
- NDOT's Engineering Details and Specifications
- Metro's Stormwater Management Manual



- Metro's Approved Water and Sewer Construction Specifications and Details
- WeGo's Transit Facility Design Guidelines

#### 2.1. Equitable and Economical Design

**Equity in Design.** Since the Metro Nashville Transportation Plan is a people driven plan, we want to ensure that all projects fully consider equity during the planning, design and construction/implementation phases. The performance of these projects will be measured based on the following criteria: Accessibility, Populations of Varying Age, Safety, Connectivity, Outreach and Environmental. The NDOT Equity in Design Framework (Appendix 2.A) will be used during the scoping and concept phases of each project.

**Economical Design.** The consultant shall make every effort to provide a safe and economical design. The consultant shall consider right-of-way (R/W), utilities, constructability, and construction sequencing during design development. The consultant shall meet and discuss economic considerations with the Department during the scoping and concept phase.



## 3. CONSULTANT SELECTION

The NDOT Project Manager is responsible for acquiring Professional Architectural and Engineering (A/E) services from a qualified consulting firm to perform all engineering work necessary to produce biddable construction plans and corresponding bid documents for the assigned project. These services may include but are not limited to: transportation planning, project scoping, public relations, survey, traffic studies/analysis, environmental studies/NEPA, design, right-of-way acquisition services, cost estimating, CEI services, etc.

### 3.1 For Metro Funded Projects

All consultants seeking to bid on an NDOT project must be registered as a vendor with Metro Procurement.

The NDOT Project Manager will put together the solicitation packets for the needed engineering and design services. All solicitation packets shall include the latest version of the following documents which can be found on the InsideMetro intranet site: <http://im/finance/procurement/r12.asp>

- Solicitation Request Form (SRF) (Appendix 3.A)
- Equal Business Opportunity (EBO) Cost Breakdown (Appendix 3.B)

In addition to these forms, the NDOT Project Manager shall provide the following information on the SRF and submit the listed documents:

- Request is for Architectural and Engineering Services
- Contract term: Project Completion
- Select Background Check if access to Metro databases and/or services will be needed.
- Scope of Work (SOW) document

The Project Manager will submit the completed solicitation packet to DOT Finance who will submit it to Metro Procurement through iProcurement. Once received, the procurement process may take a minimum of 120 days (4 months) to advertise, select and award the project to A/E consultant. Once the contract is executed, the Project Manager will request a Purchase Order through the Capital Funds Management System (CFMS) if it has not already been established by Metro Procurement.

### 3.2 For State/Federally Funded Projects

The Project Manager may use the TDOT Local Programs On-Call Consultants in accordance with the TDOT Agreement with Metro or solicit A/E services through Metro Procurement in accordance with the Local Version of the TDOT Consultant Selection Policy (TDOT Form 1-2), adopted by





Metro's Procurement Standards Board, and found in the TDOT Local Government Guidelines Manual (LGGM). On-Call consultants can be used for various project types including, but not limited to the following:

- Roadway (widening, road diets, etc.)
- Bike infrastructure
- ITS/Technology
- Resurfacing
- Sidewalk
- Bridge
- Non-Traditional
- State Industrial Access (SIA)
- Signalization
- Intersection (roundabouts, traffic circles, turn lanes, etc.)
- Greenway/Multi-use Path
- Other (planning studies, scoping reports, traffic studies, innovative projects, etc.)

To use TDOT Local Program's On-Call Consultants, the following steps shall be taken:

1. **Request On-Call Consultant Services:** The Project Manager shall notify TDOT Local Programs Representative via email or letter requesting the use of an On-Call consultant for NEPA, preliminary engineering, right-of-way acquisition, construction engineering and inspection services, implementation, or other approved A/E services.
2. **Obtain TDOT approval:** Upon approval, TDOT Local Programs will send the qualifications for the available on-call consultants and a Work Order Assignment Evaluation Form. (See Appendix 3.C)
3. **Review Qualifications:** The Project Manager shall review capability/availability, qualifications/areas of expertise, and history of similar projects of the consultants to determine the one consultant who can best provide the services needed for the project scope.
4. **Consultant Selection:** Complete and return the Work Order Assignment Evaluation Form with the selected consultant to TDOT Local Programs.
5. **Obtain/Review Estimate:** TDOT will obtain and send a man-day estimate proposal from the consultant to the Project Manager for review. The consultant may request a meeting with the Project Manager to get clarification of the project scope prior to providing the proposal to TDOT.
6. **Negotiate Services:** Project Manager shall negotiate the needed proposal tasks, man-day hours, and timeframe to complete the work with the selected consultant. The consultant will submit all proposal revisions to the Project Manager through TDOT.



7. **Proposal Acceptance:** Once the services/tasks to be performed are agreed upon, the Project Manager shall notify TDOT Local Programs of the acceptance of the proposal.
8. **Deposit Payment:** Upon acceptance, TDOT Finance will send a deposit request letter (See example in Appendix 3.D) and/or invoice to Metro requesting the deposit for the approved proposal. The deposit must either be paid to TDOT Local Programs by check or by electronic funds transfer (EFT) to a Local Government Investment Pool (LGIP) Account set up specifically for the project. For ease of transferring deposits and receiving refunds at the end of the project, the Project Manager shall work with NDOT Finance to set up an LGIP account in accordance with the instructions in the deposit request letter. Once the LGIP account is established, the deposit request shall be processed in CFMS as a payment voucher. Any unused deposit balance for a complete phase can be rolled to the next phase of work.

NOTE: No work in a particular phase shall start without a Notice to Proceed (NTP) from TDOT LPDO. Starting work in any phase without the appropriate NTP will make any work performed in that phase ineligible for reimbursement.

9. **Authorization to Begin Work:** Upon receipt of the deposit, TDOT Local Programs will authorize the consultant to begin work on the project. At that time, the TDOT Local Programs Representative will set up the Kick-off Meeting with the consultant and NDOT.
10. **Invoicing:** Since the consultant is under contract with TDOT, TDOT Local Programs will review and pay all consultant invoices. Once paid, TDOT will send copies of the paid invoices to the Project Manager for review and project record. If the Project Manager notices a discrepancy in the invoice with the work performed or hours billed, they are to notify TDOT for correction on the next invoice. Invoices received will be tracked in CFMS to document payment made against the deposit.

The On-Call Consultant selection process may take 6 – 8 weeks.

### 3.3 Consultant Performance Evaluation

Nashville DOT and the consultant will collaborate to produce engineering plans at the highest level of quality. To capture the performance of all consultants, evaluations of the consultant will occur after key project milestones, including:

- Concept Team Meeting
- Preliminary Plan Review
- Right-of-Way Plan Approval
- Final Field Plan Review
- Constructability Review



Evaluations (See Appendix 3.E) will be completed in accordance with the following guidelines (as applicable):

- 1) The NDOT Project Manager will be responsible for completing the evaluation for each phase outlined above.
- 2) The evaluation is to be completed and provided to the Division Engineer for signature less than 1 week after the engineering phases outlined above (as applicable)
- 3) The NDOT Project Manager will be responsible for sending the evaluation form to the consultant for signature.
- 4) Should there be refusal to sign by the consultant and/or a meeting request, the NDOT Project Manager shall set up a meeting with the consultant and include the Chief Engineer and Division Manager.

The evaluation is not required for in-house projects.



## 4. PROJECT ADMINISTRATION

### 4.1. Schedule

Preparing and maintaining the project schedule is critical to the success of each project. The Consultant should develop a graphical schedule that includes key milestones of the project. The milestones shall include but not limited to date or date ranges for the following (as appropriate):

Notice to Proceed	Advertise Date
Kick-off Meeting	Let Date
Concept	Construction
Public Involvement	
Environmental Document	
Database Preparation	
1st Utility Submission (At least 60 days prior to PPR)	
Preliminary Field Plan Review	
Preliminary Right-of-Way Plan Submission	
Approved Right-of-Way Plans	
Right-of-Way Acquisition	
2nd Utility Submission (At least 60 days prior to CPCR)	
Final Field Plan Review (At least 90 days prior to Advertisement Date)	
Permits (Encroachment, NWP, SBV, etc.),	
Submit Erosion Control Plans to EPD (At least 60 days Advertisement Date)	
Constructability Review (At least 30 days prior to Advertisement Date)	

The project schedule should be developed to account for unexpected events and provide opportunities to accelerate different phases of the project to achieve ROW and construction plan delivery dates committed to in the contract.

If the consultant determines that a project schedule needs to be modified due to unforeseen circumstances, an electronic copy of the revised schedule shall be submitted to the Contract Administrator or Project Manager with a letter justifying requested schedule modification(s) and requesting acceptance of the revised schedule by the county. The new schedule shall not be



adopted until approved by NDOT. Schedule revisions that shift the advertising date must also be approved by the Chief Engineer or the Capital Improvement Division Manager.

#### 4.2. Project Files

The Project Manager shall be responsible for maintenance of the official project file throughout the project. The project files shall include all correspondence, meeting minutes, significant e-mails, plans, utility mark-ups, quality control (QC) sets, permit applications, geotechnical reports, hydrologic/hydraulic reports, etc. The official project file will be housed on NDOT servers. A SharePoint folder for the project will be set up for the Consultant and Project Manager to share project documents and transmit large project files.

At project milestones, electronic drawings and all other documents, per the project contract, prepared by the consultant or others involved in the project, shall be submitted to NDOT. These documents shall remain the property of NDOT without limitations as to their future use. Applicable supplemental specifications, special provisions, and computations shall also be furnished by the consultant as part of each milestone submittal.

The consultant shall submit to the Project Manager, in appropriate electronic media, one copy of all final sheet files and design files created as a result of the design process. Sheet, design and database files shall be generated in the latest version of AutoCAD. The consultant shall provide appropriate level schedules, documentation, and assistance to NDOT to read, interpret, and effectively utilize the computer files. The consultant may be required to provide project drawings and files at any time prior to project close-out at NDOT's request. NDOT shall only request drawings and files that are within the consultant's scope of work. Consultants must obtain approval from the Chief Engineer should they desire to use design software other than AutoCAD.

#### 4.3. Meeting Minutes and Meeting Notes

The consultant is responsible for preparing all project meeting minutes throughout the course of their contract. This does not alleviate the Project Manager from taking their own notes of the meeting for incorporation into meeting minutes. The meeting minutes should be submitted to the Project Manager within one (1) week of the meeting for final review before distribution to all meeting attendees. Official meeting minute submittals shall be transmitted in PDF format.

The Project Manager is responsible for preparing meeting notes for all internal project related meetings and documenting significant phone conversations and discussions where the consultant is not involved. Meeting notes shall be drafted in email, Microsoft Word or PDF and sent to meeting attendees no later than one (1) week of the meeting.

All meeting minutes and meeting notes shall be filed in the appropriate electronic file folder for the project.



#### 4.4. Design Documentation

The consultant shall maintain a design notebook for each contract project. The notebook shall include all design decisions and approvals during the contract life of the project. Submittal of an electronic copy of the design notebook shall be required as part of the design closeout package (See Chapter 16).

#### 4.5. Marking of Underground Facilities

The consultant will use the uniform color code established by the American Public Works Administration's (APWA) *Guidelines for Uniform Temporary Marking of Underground Facilities* to mark the location and/or route of all active and out-of-service underground utilities within the project limits on the plans and in the field.



#### 4.6. Quality Control/Quality Assurance

All consultants are expected to perform quality assurance (QA) checks during all phases of project development. NDOT expects quality to be built into every component of the design, including the processes used. It should not just be checked prior to submittal of a deliverable.

The Project Manager shall perform a cursory review of the plans after each phase submittal (conceptual, preliminary, right-of-way, construction). This review does not alleviate the consultant's ultimate responsibility to ensure that the project plans meet current design standards, reflect accurate quantities, take the safety of pedestrians and the traveling public into account,





resolve utility conflicts, and produce minimal impact to property owners, while maintaining project objectives, and are clear, concise, and biddable.

For locally managed State/Federal projects, the consultant should use TDOT's Roadway Design Checklists for Initial Studies, Preliminary, ROW, Construction, and Resurfacing plans and the 'Common Issues on Local Programs Plans' document to perform QA checks during all phases of project development. Links and further directions to these checklists and documents can be found on TDOT's Roadway Design Division webpage under Quality Assurance/Quality Control:

<https://www.tn.gov/tdot/roadway-design/quality-assurance-quality-control.html>

#### 4.7. Plans Submittal

The consultant shall submit for each plan review one (1) PDF full size (scalable 24" x 36") set of plans. Utilizing current NDOT or TDOT guidelines, as appropriate, and the border for all sheets shall be set up for 24-inch by 36-inch plots. PDF files for roadway, signal, lighting, bridge, and traffic control plans, shall contain one multi-page file, rather than individual sheet files. All submittals must include a unique date on the plan set cover sheet to discern from other submittals.

Final ROW and construction plans must be stamped, signed, and dated by the Engineer of Record. Final ROW plans must be signed/accepted by the NDOT Division Manager and/or the Chief Engineer. Final construction plans must be signed/accepted by the Chief Engineer. The Project Manager shall provide a scanned copy of the cover sheet, with signatures, to the consultant. All plan revision submittals shall have the original signatures (consultant and NDOT) and appropriate revision dates.

#### 4.8. Linear Transportation as it relates to Metro MS4 NPDES Permit Compliance (via Metro Grading Permit plan review and issuance process)

Metro Nashville and Davidson County (Metro), a regulated entity under the National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Separate Storm Sewer System (MS4) permit, is required to develop, implement and enforce a program to address potential impacts from stormwater runoff from land development projects. Metro Water Services (MWS) regulates new development and redevelopment projects including, but not limited to residential subdivisions, commercial site development, and industrial facility development projects via Metro's Stormwater Management Manual (SWMM) and Chapter 15.64 of the Metro Code. MDOT linear transportation projects are held to certain SWMM regulations and Metro Code.

Linear transportation projects are defined as a project for the construction, expansion, modification, or improvement of features such as, but not limited to, roadways, bikeways, and pedestrian paths (sidewalks). All public linear transportation projects are required to meet certain



### 4. PROJECT ADMINISTRATION

Metro SWMM requirements and are required to submit stamped engineering plans to MWS Development Services. All public linear transportation projects shall provide drainage calculations and analysis, Erosion Prevention and Sediment Control (EPSC) measures, floodplain information, and regulatory permits as part of the project design. All public roadway projects shall meet the requirements of the Complete Street Ordinance.

Approved plans will result in the issuance of a Metro Grading Permit for the project that involves ongoing site inspections. As-built submittals shall be in accordance with the Metro SWMM and be submitted to MWS Development Services for review. All project Stormwater Control Measures (SCM) are the responsibility of NDOT to maintain in perpetuity once built. MWS NDPEs Office staff will provide the inspection services for all such SCMs and communicate any respective maintenance needs to NDOT.





## 5. PROJECT SCOPING AND KICK-OFF

### 5.1. Project Scoping

If using an A/E consultant under an Indefinite Delivery/Indefinite Quantity (IDIQ) contract with Metro, the Project Manager shall hold a proposal scoping meeting with the consultant's point of contact. At this meeting, the scope of the project and existing concepts (if any) shall be discussed in detail and the project objectives clearly defined. For smaller projects, it is important at this meeting to identify if a concept phase is needed, and what deliverables would be required for the phase. For projects with well-defined scopes, the concept phase is typically not needed. If project decisions need to be made based on traffic studies, public involvement, or other studies, a more comprehensive concept phase scope should be identified. The Transportation Planning Department should be part of this process.

The consultant shall submit a fee proposal and schedule to the Project Manager within two (2) weeks following the scoping meeting. The NDOT Project Manager and Division Engineer shall review and approve a project's scope, fee and schedule before requesting a Purchase Order (PO). Following approval of the PO by Metro Procurement, the Project Manager has authority to issue the consultant notice to proceed (NTP) in writing, by phase (Concept, NEPA, Preliminary Engineering, ROW Acquisition, Construction Support).

### 5.2. Project Kick-off

After the consultant has been obtained and NTP issued for the initial project phase(s), the Project Manager will schedule a kick-off meeting with the consultant team, the NDOT Project Manager and Metro Finance to discuss the project details, roles and responsibilities of the consultant and NDOT staff, and to hold Metro Invoice Training (for Metro consultants only). The consultant will be responsible for documenting the discussion in the meeting minutes.

### 5.3. Kick-off Meeting: NDOT Responsibilities

- 1) Issue an NTP for the initial project phase(s) to the consultant on NDOT letterhead. For small projects, NTP for the entire project may be given. The consultant may not bill for any work performed prior to the issuance of an NTP or a PO.
- 2) Provide training on how to submit invoices using the Metro invoice template and progress report. The consultant's Project Manager and billing staff are invited to attend the training. See Appendix 5.A for an example invoice and invoicing instructions.
- 3) Invite staff from Water Services (Stormwater, sewer, maintenance), Utility, Planning, Construction, WeGo, Maintenance, Traffic Operations, and Right-of-Way departments, along with NDOT Management, and any other organization associated with or affected by the project, to attend the project kick-off meeting.



- 4) The Planning staff shall be responsible for communicating the history and background behind the project; tell how it relates to the goals of Nashville Next, the Nashville Transportation Plan, etc.; and tell how the project intersects with other planned infrastructure projects, development projects or other studies.
- 5) Discuss the level of concept phase required for the project.
- 6) Provide location of the latest Metro and NDOT design manuals, standards, specifications, guidelines, etc.
- 7) Provide the consultant with available materials that may assist with project development. This includes items such as accident data, traffic counts, as-built plans, bridge inspection reports and repair plans, project concepts (if already defined), CPR (if available), etc.
- 8) Review Metro geographic information system (GIS) and other sites during the meeting to note flood plains, nearby projects in Metro's Transportation Plan, TIP, existing and proposed trail locations, bike and pedestrian improvement plans, nearby developments under construction, proposed developments, upcoming TDOT projects in the area, etc.
- 9) Provide a Roadway Design checklist to the consultant for use and reference during project development (if required).
- 10) Invite the NDOT Utility Coordinator to distribute a list of current utility owners and contacts and discuss calling 811 for utility locate markups prior to survey.
- 11) Supply the consultant with a copy of a sample survey notification letter. (See Appendix 5.B)

#### 5.4 Kick-off Meeting: Consultant Responsibilities

- 1) Provide a copy of the project schedule. This should be the same schedule represented in the executed contract, possibly modified with a revised NTP date. This may be revised one more time based on Metro's overall schedule. The consultant may be asked to maintain the overall project schedule during their contract period.
- 2) Provide within one (1) week of this meeting the project survey notification letters in mail merge format to the NDOT Project Manager for printing and distribution to potential affected property owners on NDOT letterhead before field work begins. If the consultant is assigned the task of distributing the survey notification letters, NDOT letterhead will be provided to them. In this case, the consultant shall obtain the signature (wet or electronic) of the Project Manager prior to sending the letters out and shall never make use of a duplicate signature of any NDOT staff.
- 3) Obtain GIS data for the project(s). Data may be obtained by contacting the Metro Planning's GIS and Mapping Department or by coordinating through the NDOT Project Manager. The consultant is required to have an executed contract, PO, and NTP prior to this data being made available to them.



## 6. CONCEPT PHASE

The objective of the concept phase is to develop a concept summary, comprised of a concept report and layout, which describes/depicts recommended project footprint, termini, and engineering features. This is similar to the Capital Planning Report defined in Chapter 1.0 of this manual but may contain a little more information for planning purposes. The Project Manager will provide the consultant with a copy of the CPR for a project. If a CPR has been performed in the past three (3) years and no significant changes to the project location or vicinity has been made, the CPR may be used in lieu of the Concept Report.

During the development of concept alternatives and layouts, the project need and purpose, traffic studies, design manuals, and Metro Nashville Complete Streets Policy, Walk/Bike Plan, WeGo Transit Plan, Parks Greenway Plan and Transportation Plan should play a role. The extent of the concept phase deliverables will be identified during the scoping meeting based on the project complexity and decision-making needs of the project team.

### 6.1. Concept Report

The Concept Report (see Appendix 6.A for template) and associated studies should focus on setting the foundation for the final design product and for concept layout development prior to beginning preliminary design. The report should summarize existing conditions including accident and traffic data and define the need and purpose of the project. Additionally, the concept report should define the design criteria for the project. Once the Concept Report is complete and ready for approval, the Project Manager will be responsible for obtaining the required signature for the cover sheet.

#### 6.1.1. Concept Layout

A concept layout may be the only deliverable in the concept phase at the Division Manager's discretion. The concept layout should clearly depict the scope of work on the latest Metro GIS aerial photography and should include engineering details such as project limits, stationed horizontal alignment(s), existing and proposed R/W, easement and construction limits, required displacements, and all major utilities. Horizontal curve data and parcel owner name should also be included on the scalable layout. Associated profile(s) and cross sections should also be developed for major and new location projects, and for minor projects as directed by the NDOT.

#### 6.1.2. Alternatives Analysis

For major projects on new alignment, the concept summary will focus on alternatives analyses. Alternatives studies are typically reserved primarily for new location projects but may also be used for routes implementing complete street features such as sidewalks, bike paths, multi-modal paths, and green zones that may require variances. Multiple alignment alternatives should be developed to enable the consultant to make a recommendation to NDOT of a



preferred alignment: a cost-effective solution taking into account the Equity in Design elements identified in Appendix 2.A with the least impact to the community and environment.

#### 6.1.3. Traffic Study

A traffic study, if included in the project's scope, shall be submitted to the Project Manager who will distribute it to the Traffic, Development, and Transportation Planning Divisions for review. This study should include the traffic data (i.e., existing, opening and future years traffic, LOS, accidents, walking/biking connectivity analysis, etc.) and conclusion(s) that justify the proposed design recommendations. If a new traffic signal is recommended as part of the project, a signal warrant study should be included as part of this submittal. Each study, upon approval by NDOT, should be included as an appendix to the concept report.

Traffic engineering and studies shall be performed in accordance with procedures outlined in the current edition of the "Highway Capacity Manual" published by the Transportation Research Board, the current edition of the "Manual on Uniform Traffic Control Devices" (MUTCD) published by Federal Highway Administration, and other appropriate guidelines outlined in Section.

#### 6.1.4. Concept Construction Cost Estimates

Concept construction cost estimate(s), with appropriate contingency percentage (See Appendix 6.B), shall be prepared for each concept layout and included in appropriate concept report submittals to the NDOT.

#### 6.1.5. Environmental Review/NEPA

The National Environmental Policy Act (NEPA) was signed into law on January 1, 1970 and requires federal agencies to generate their decision making based upon the effects those decisions will have on the environment. Under NEPA, agencies will evaluate the environmental and related economic and social effects of their proposed actions. **NEPA is required on all state and federally funded projects.**

NDOT will use an environmental review, if included in the scope of the project, to document all environmental, cultural, social, ecological, and biological factors for impacts associated with each potential project alternative, summarize the findings, and identify potential permits needed. NDOT projects should be assessed in accordance with NEPA in case a state or federal funding opportunity becomes available that the project is eligible for.

For NDOT to receive federal funds for projects through the Tennessee Department of Transportation (TDOT) Local Programs Office, the NEPA process must be completed. This will also ensure that Metro is following all state and federal environmental laws, executive orders, rules, regulations, policies, and procedures. State/Federal projects shall follow the Environmental (NEPA) Clearance Procedures found in Chapter 4 of the LGGM.



The environmental review documents shall be submitted to the Project Manager for review. This task should be performed during the concept phase to identify potential environmental impacts to the project area. This document should be included in the appendix of the concept report.

## 6.2. Concepts Requiring Metro Council Approval

A project concept should go to the Metro Council for approval, if applicable, per the following guidelines:

- Projects with dedicated funding in the Capital Spending Plan, that exceed a concept estimate cost of \$5M for right-of-way acquisition, utilities, and construction.
- Projects that may be highly complex or have great community interest. This shall require a recommendation by the Director and Chief Engineer with support and recommendation of the Council Member whose district the project is in.
- When concept approval is specifically requested by the Council Member whose district the project is in.
- When concept approval is specifically requested by the NDOT Project Concept Committee or Metro Council.

For projects requiring NDOT Project Concept Committee or Metro Council approval, the Project Manager or Division Manager will coordinate project information requested for the legislation and/or agenda item for concept approval.

## 6.3. Concept Meeting

A concept meeting may be held after the Project Manager concurs that the concept summary has been developed to a satisfactory level. The purpose of the concept meeting is to thoroughly review the concept layout and draft Concept Report. The consultant shall be responsible for preparing and presenting the draft concept summary, which should include concept data, layouts, and studies and their findings. The Project Manager will schedule and invite all necessary attendees to the concept meeting.



#### 6.4. Consultant Deliverables Summary

The deliverables listed below shall be provided by the Chief Engineer or Division Manager unless specifically excluded from the project's scope.

- 1) Traffic study, if included in the project's scope, attached as appendix to concept report
- 2) Concept Report and/or concept layout in scalable PDF format. The county will distribute each submittal for internal review per NDOT's standard distribution list.
- 3) Minutes of project concept meeting and other scoping or stakeholder meetings (prepared and submitted to the county electronically)
- 4) Concept construction cost estimate(s), with appropriate contingency percentage
- 5) Environmental Review, if included in project's scope, attached as appendix to Concept Report
- 6) Any other reports required to be submitted as an appendix to the Concept Report.





## 7. PUBLIC INVOLVEMENT

Public involvement is an important part of project development. It is necessary and critical to communicate with constituents when designing projects that meet the needs of Nashville residents. On State/Federal projects, it's also a component of environmental scoping and is a critical activity during the Environmental Review/NEPA process. The goal of public involvement is to promote an exchange of information between the public, NDOT and the consultants. Projects require varying levels of public involvement depending on the scope, nature and complexity, and potential impacts of the project.

Public involvement activities may be as simple as informal conversations with the affected public, notification letters to property owners, announcements in local newspapers, on websites and social media platforms, flyers distributed at community centers, schools, or public libraries or and may include more in depth public involvement such as hosting Public Information Open Houses (PIOHs), stakeholder or community meetings.

Determination of public involvement requirements occurs during the scoping or concept phase of the project, but complications with the project or unexpected project opposition may require subsequent addition of public involvement tasks to the project's scope. Examples of such a modification would be the subsequent identification of the need for a detour for staging, which means the scope should include a public involvement task for the development of a plan for communicating the detour to the public or if the alignment of a project shifts or signification project features change (i.e., a roundabout instead of a signalized intersection) based on public comments from an initial public meeting.

Additional public involvement (other than what is required) should be conducted based on the impact of the project. NDOT will use the matrix below adopted from the City of Seattle (Exhibit 7-1) when conducting public involvement.

For State/Federal projects, NDOT will need to coordinate with TDOT's Environmental Division through the TDOT LPDO. Further guidance on public involvement can be found at the following links:

[https://www.tn.gov/content/dam/tn/tdot/programdevelopment/localprograms/documents-and-forms/LGG\\_Manual.pdf](https://www.tn.gov/content/dam/tn/tdot/programdevelopment/localprograms/documents-and-forms/LGG_Manual.pdf)

<https://www.tn.gov/tdot/environmental-home/nepa-office/nepa-hub-for-local-programs-projects.html>

<https://www.tn.gov/content/dam/tn/tdot/community-relations/public-involvement-plan.pdf>



### 7. PUBLIC INVOLVEMENT

Type of Engagement	Goal of Participation	Tools/Activities	Inclusive Engagement Techniques	Indicators/Evaluation
<b>INFORM</b> (required for all types of engagement)	Educate the public about the rationale for the project or decision; how it fits with City goals and policies; issues being considered, areas of choice or where public input is needed.  <i>Message to the Public:</i> To keep everyone informed.	<ul style="list-style-type: none"> <li>- <i>Fact Sheets</i></li> <li>- <i>Brochures</i></li> <li>- <i>Websites</i></li> <li>- <i>Open Houses</i></li> <li>- <i>Exhibits/displays</i> (in public areas)</li> <li>- <i>Newsletters</i> (mailed/online)</li> <li>- <i>Newspaper articles</i></li> </ul>	<ul style="list-style-type: none"> <li>Translation of all key documents.</li> <li>Interpretation at events.</li> </ul>	
<b>CONSULT</b>	Gather information and ask for advice from citizens to better inform the City's work on the project.  <i>Message to the Public:</i> Will keep everyone informed, listen to and acknowledge concerns and provide feedback on how public input influenced the decision.	<ul style="list-style-type: none"> <li>- <i>Focus groups</i></li> <li>- <i>Surveys, interviews, and questionnaires</i></li> <li>- <i>Public Meetings</i></li> <li>- <i>door-to-door</i></li> <li>- <i>Workshops and working sessions</i></li> <li>- <i>Deliberative polling</i></li> <li>- <i>Internet</i> (interactive techniques)</li> </ul>	<ul style="list-style-type: none"> <li>Translation of all key documents.</li> <li>Interpretation at events.</li> <li>Provision of Childcare.</li> <li>Culturally appropriate food.</li> <li>Individual meetings with community leaders.</li> </ul>	

Type of Engagement	Goal of Participation	Tools/Activities	Inclusive Engagement Techniques	Indicators/Evaluation
<b>COLLABORATE</b>	Create a partnership with the public (key stakeholder groups) to work along with the City in identifying problems, generating solutions, getting reactions to recommendations and proposed direction.  <i>Message to the Public:</i> Will work with the public to ensure that their concerns and issues are directly reflected in the alternatives developed and show how public input influenced the decision.	<ul style="list-style-type: none"> <li>- <i>Citizen Advisory Committee/ Liaison Groups</i></li> <li>- <i>Visioning</i></li> <li>- <i>Consensus building</i></li> <li>- <i>Participatory decision-making</i></li> <li>- <i>Charrettes</i></li> <li>- <i>Implementation Committee</i></li> </ul>	<ul style="list-style-type: none"> <li>Translation of all key documents.</li> <li>Interpretation at events.</li> <li>Provision of Childcare.</li> <li>Culturally appropriate food.</li> <li>Individual meetings with community leaders.</li> </ul>	
<b>SHARED DECISION-MAKING</b>	Decision-makers delegate decision-making power to stakeholders or give them a formal role in making final recommendations to be acted upon.  <i>Message to the Public:</i> Will implement what the public decides.	<ul style="list-style-type: none"> <li>- <i>Citizen juries</i></li> <li>- <i>Ballots</i></li> <li>- <i>Delegated decisions to specific representative citizen body or to voters</i></li> </ul>	<ul style="list-style-type: none"> <li>Translation of all key documents.</li> <li>Interpretation at events.</li> <li>Provision of Childcare.</li> <li>Culturally appropriate food.</li> <li>Individual meetings with community leaders.</li> </ul>	

Exhibit 7-1





#### 7.1. Public Information Open Houses (PIOH)

Significant projects may require a PIOH to communicate to and obtain input from the public. The Transportation Planning Department may help with this effort. The Council Member for the district the project is in shall be notified one month in advance of PIOH. They may want to coordinate this with a community meeting they have planned, so the date may change. Two (2) weeks prior to scheduled date for the PIOH, the following shall occur:

- 1) Notify the affected property owners, constituents of that district, local businesses, Metro schools, WeGo (if project is on a bus route), and the general public.
- 2) Consultants develop and provide to the Project Manager PIOH materials to be distributed to the public for review. Materials to be developed include:
  - A power point presentation about the project, when necessary.
  - Color plots of the project layout on aerial backgrounds
  - Information sheets with pertinent project information
  - Comment forms for the public to fill out and return that evening or to mail back to NDOT at a later date.
- 3) If needed, a dry run may be held at NDOT to coordinate the open house, discuss personnel to attend, and do a final review of materials to be presented. Following the dry-run meeting, the consultant shall provide PDF files of the concept layout and information sheets to the Project Manager for posting on the Project webpage.

#### 7.2. NDOT Responsibilities

- 1) NDOT will be responsible for developing and publishing the required legal advertisement and press releases.
- 2) The Project Manager shall provide the necessary roadside sign information to the consultant or the NDOT sign shop at least one (1) month prior to the PIOH and have the signs placed at least two (2) weeks prior to the open house, unless instructed otherwise.
- 3) The Project Manager shall be responsible for determination of location for the PIOH location. The Project Manager and consultant shall also visit the location prior to the PIOH dry run to determine available wall space, meeting logistics, and display mounting requirements.
- 4) The Project Manager shall prepare and post directional signs inside the PIOH facility to assist the public with locating the meeting room.
- 5) The Project Manager shall be responsible for getting another DOT staff member to assist with the sign-in of meeting attendees and maintaining a count of attendees.
- 6) NDOT shall provide a PIOH comment box to house citizens' comments. At the conclusion of the meeting, NDOT shall take all comments and return them to the office. Up to 30 days shall be allowed for the public to provide comments on the project.



- 7) At the end of the PIOH open comment period, the Project Manager shall provide a copy of all the comments submitted at the PIOH and received by mailed or emailed to NDOT.
- 8) Once the comment report is received from the consultant, the Project Manager shall send the synopsis to the Division Manager and Chief Engineer.

### 7.3. Consultant Deliverables

- 1) The consultant shall provide copies of the concept layout and PIOH handout and project fact sheet for review and comment at the dry run or two weeks prior to the scheduled PIOH if no dry run is held. The number of mounted displays, handouts, and comment forms should be determined at the dry run.
- 2) If the facility does not provide the ability to mount displays on the walls, the consultant shall be responsible for providing easels and foam board to support the presentation displays.
- 3) The consultant shall provide PIOH related files and documents in PDF format for posting to the project's webpage.
- 4) Within five (5) business days following the conclusion of the comment period, the consultant shall prepare and submit to the Project Manager a PDF file comprised of all comment forms and a brief synopsis of the meeting, which includes the number in attendance, main issues that were emphasized, a preliminary count of for/against/not committed, and any other pertinent issues.
- 5) The consultant shall be responsible for preparing a letter that responds to all PIOH comments within two (2) weeks after the comment period has closed and shall submit the responses to the Project Manager in Microsoft Word format. NDOT may revise the responses as deemed appropriate prior to mailing copies of the letter.
- 6) The Project Manager shall mail the final draft of the letter to all commenters if included in the project scope.
- 7) Following review of the comment/response letter, determination of which comment responses to incorporate in the project shall be made by NDOT with input from the consultant. The consultant shall revise the concept layout accordingly prior to final submittal of the concept summary to the Project Manager.



## 8. SURVEY AND GIS DATA PREPARATION

A complete and accurate survey of existing features is critical for the sound design and construction of a project. All topographic field surveys shall be tied to the Tennessee Geodetic Reference Network. Project plans shall show the horizontal datum, vertical datum, and the datum adjustment factor on all sheets that contain survey information. Control points, benchmarks, horizontal controls, and vertical controls are to be shown in the project plans as well. All surveys shall comply with "Rules of Tennessee State Board of Examiners for Land Surveyors, Chapter 0820-03 Standards of Practice" and the most current version of the TDOT Survey Manual. All surveys shall be conducted under the supervision of a Registered Land Surveyor licensed in the state of Tennessee.

Additionally, all man-made structures (houses, barns, sheds, buildings, driveways, sidewalk, signs, etc.), topography, and drainage features within 300 feet of the existing or proposed roadway centerline shall be located and included in project's survey file(s). Any reduction in the above survey requirements must be approved by the Chief Engineer.

CADD and Imagery shall adhere to TDOT CADD and Aerial Imagery standards.

The consultant shall request an 811 utility locate for the project area prior to survey commencing. When this occurs, the surveyors should pick up all utility markings for inclusion in the survey files. For all projects, the surveyor should note information posted on utility transmission poles, including tower numbers, utility mile post numbers, easements owned by the utility company, utility owner name and contact information. Tops and inverts, when accessible, of sanitary sewer and drainage lines shall be located by surveyors and included in survey file(s).

### 8.1. Consultant Deliverables

- 1) All researched deeds, plats and titles should be compiled into a PDF document.
- 2) Compile and maintain a project specific property information database that includes property tax map identification numbers and property owner names, addresses, and phone numbers (if readily available). The database shall be maintained through all phases of the project. The survey notification letter shall be delivered, at a minimum, to these property owners 10 days prior to survey field work commencing.
- 3) Provide a list of property owners, copies of deeds, and parcel acreage for each impacted property to Metro in Microsoft Excel format for NDOT use.
- 4) Vector CAD files containing extracted planimetrics using TDOT levels and symbols and bare earth contours at one (1) - foot intervals (USNMAS).
- 5) Hard-copy topographic survey map sealed by a Tennessee Registered Surveyor.
- 6) Compiled GIS-based utility data
- 7) Compile an ASCII file of all survey data collected in the field that includes point number, Northing, Easting, elevation, and descriptor or code in a comma-delimited format. At pre-



### 8. SURVEY AND GIS DATA PREPARATION

construction closeout, the file(s) should be submitted to the Contract Administrator or Project Manager and include proposed ROW and easement points along with the design centerline control points, such as begin and end project, intersection points, PCs, PIs and Pts.

- 8) Submit a survey control package in PDF format that includes the project number, project name, date of survey, coordinates of the beginning and end points of the project, length of the project, zone, horizontal datum, vertical datum, geoid, unit of measurement, combined scale factor for the project area, conventional or GPS survey, and diagrams with ties to control points.



## 9. UTILITY AND RAILROAD COORDINATION

Utility coordination will be conducted throughout the life of the project. Railroad coordination will be conducted if there is a railroad in or near the affected project area. **All State/Federal Projects shall follow the utility and railroad coordination process outlined in the LGGM and the TDOT Utility Manual:**

[https://www.tn.gov/content/dam/tn/tdot/right-of-way-division/utility-documents/Utility\\_Procedures\\_Manual.pdf](https://www.tn.gov/content/dam/tn/tdot/right-of-way-division/utility-documents/Utility_Procedures_Manual.pdf)

During the planning and development phases of any roadway project, it is advisable to be in early contact with the utility companies that will be affected by a project. Time and money can be saved with advanced coordination and planning regarding utility facilities. It is good practice to contact utilities as early as possible with the potentially affected facilities. This serves several purposes such as assuring the proper contact information and allowing the utilities time to plan and budget for the project.

It is also advisable to assess the involvement of railroads around the project area. If there is a railroad or railroad property near the project limits, you are strongly encouraged to contact railroad or for State/Federal projects, the TDOT State Railroad Coordinator. Mitigation may be required to address the railroad, and this will impact funding of the project as well as the design and possibly permitting. The railroad issues need to be addressed as early as possible.

The NDOT Project Manager shall be responsible for providing utility and railroad coordination for all projects unless this task is included in consultant's scope per the Metro's direction.

Consultants should be aware of the APWA Uniform Color Code for Utilities. (See Chapter 3) All utility companies use these codes when marking existing utilities in the field.

### 9.1. Early Utility Notification

The NDOT Project Manager or Consultant shall provide early notification to the potentially affected utilities and provide notice of the subject project. This initial contact should be made after the Design notice to proceed. The Utility Owner contact process is as follows:

1. Obtain a list of known utilities in Davidson County from the Chief Engineer.
2. Notify ALL utilities on the list of the proposed project. The notice should:
  - a. Be sent certified mail, return receipt requested, verified email, or mailing with record of delivery such as UPS, FEDEX, or hand delivered receipt.
  - b. Clearly identify the specific project location, beginning and ending project limits, project description, metro project number, federal and State project identifiers as well as the unique TDOT PIN identifier (for State/Federal projects only) on a vicinity map.



- c. Ask utility providers to indicate if they own facilities within the project area.
  - i. IF YES, utility to provide:
    1. Type of utility service
    2. Description
    3. General location
    4. Available utility mapping information
    5. A statement indicating whether the utility:
      - a) Is in conflict with the project
      - b) Is not in conflict with the project
      - c) Unknow
  - ii. IF NO, utility to provide a no conflict letter.
3. Within 60 days, the utility owner shall inform NDOT whether or not it is affected by the project.
4. After 60 days, a second and final notice shall be sent to utility owners that have not responded to the initial utility owner notification.
5. Utility owners have 10 days from receipt of the second notice to respond regarding the presence of their facilities in the project area. Failure by the utility to respond can be interpreted as presumption that the utility does not have facilities in the project area as detailed in T.C.A. 54-5-853. Utilities which are unresponsive to the early notification letter(s), which have existing facilities within the proposed project limits, shall be liable to the Department's contractor for any damages incurred due to their failure to respond.
6. NDOT sends a copy of the preliminary plans to the affected utilities for review and initial comment.

## 9.2. Early Utility Submittals

### 9.2.1. Utility Relocation Plans

Upon completion of the ROW plans, NDOT shall distribute a copy of the ROW plans with cross-sections for review and comment to each affected utility along with a letter requesting that relocation plans, estimates, and work schedules be submitted within 120 days after receipt. (T.C.A. 54-05-854). The plans and letter shall be delivered in a manner such that proof of delivery can be verified.

The letter should state the specifics of the project including the projected schedule and specific dates by which the utility must submit its proposed relocation plan to NDOT. It should also state that if the relocation of existing facilities conflict with construction is being constructed within

- a. State ROW or interstate system: the utility will be responsible for acquiring a permit from TDOT prior to construction.
- b. NDOT ROW: the utility will be responsible for relocation at the utilities expense.





Per TCA § 54-5-854(b), within 120-days of receiving plans, the Utilities are required to submit color-coded marked-up location plans (commonly referred to as “Rainbow Plans”) showing vertical and horizontal locations of their existing underground facilities as well as the horizontal location of existing above ground utility facilities.

Rainbow Plans Legend:

- Red-Proposed facilities
- Yellow/Orange-Existing facilities to remain
- Blue- Temporary facilities
- Green-Existing facilities to be removed

Under the CADD Disclaimer, the utility is required to provide an electronic file showing the relocation plan per the Department standards inclusive of vertical and horizontal locations of all proposed underground installations. If the utility is relocating, they must also show the proposed locations of their relocated facilities on the Rainbow Plans. The Utilities shall also provide a schedule of calendar days to accomplish their relocation and an estimate of cost if reimbursement is sought. The consultant should ensure that reimbursable relocations are specifically noted on the plans and accounted for in the bid items.

NDOT will reimburse a utility for relocation only if the project requires the utility to move under the conditions listed below. These types of relocations will require a relocation contract with the affected utility.

1. Out of the existing or proposed ROW to private or Metro owned property. If moving to Metro owned property, a utility easement may need to be granted.
2. Out of existing private property to within proposed ROW.
3. Underground from above ground. For NES, the project will pay for the entire underground installation. For other utilities, the project will pay the conduit and duct bank needed to for the underground installation. The utility will be responsible for paying for installing hand holds, pull boxes, etc.

Should the Utilities need more time to coordinate with other utility owners or if the plans change due to a revision, NDOT may grant the utility an additional 45-day extension. If the extension is granted, a revised due date letter must be provided to the utility. The total time to respond shall not exceed 165 total days.

At the conclusion of the 120/165-Day deadline, NDOT shall send the final notice letter to all Utilities who have failed to respond, notifying the utility that the deadline has passed, and any eligible reimbursement is in jeopardy.

#### 9.2.2. Utility Coordination Meeting & Final Utility Plan Revisions

The Project Manager shall facilitate a utility coordination meeting with the consultant and affected utility owners. The purpose of this meeting is to obtain any additional existing



### 9. UTILITY AND RAILROAD COORDINATION

information from each utility owner, if not received by the end of the 120/165-day period and to identify utility conflicts, thus beginning discussions to resolve those conflicts. Special attention should be paid to major utilities: petroleum pipelines, electrical transmission lines, large diameter water lines, natural gas pipelines, and equipment at “hub” locations of cable TV & telecommunications companies. Submitted designs should avoid these major utility features where possible. The Project Manager shall request utility companies to provide documentation of easements, if not already submitted, and the nature of facilities located thereon. The consultant shall identify, resolve, to the extent possible, and list all utility conflicts and provide this information to the NDOT. An example of conflict resolution is redesigning storm drain lines to avoid major utility lines where practical. Any remaining utility conflicts shall be identified in writing, and the consultant should be prepared to discuss the remaining conflicts at the construction plan field review (CPFR).

The consultant shall provide the Project Manager one (1) scalable full-size PDF plan set (24” x 36”) and DGN files for the 2nd utility submittal. These files and plans should be submitted following the PPRF and after any major revisions have been incorporated into the plans. The purpose of this submittal is for utility companies to validate the location of their facilities provided in the 1st utility submittal mark-ups and to mark-up any required utility relocations as a result of project impacts. Unless otherwise specified, 2nd utility submittals should include a cover sheet, typical sections, construction plan sheets, profile sheets, cross sections, drainage profile sheets, utility plan sheets, and signal, lighting, and wall/bridge plans, if applicable. Where anticipated, additional plan sheets should be included in the utility submittal where drainage conflicts and culvert crossings occur. The Project Manager will provide the consultant with utility markups or electronic files, prepared by utility companies, for inclusion in the final utility plans. The utility submittal shall occur no less than 60 days prior to the CPFR.

For several utilities, it is desirable for coordination to occur using electronic file delivery. Throughout the project, it may be necessary for the consultant to provide to the Project Manager with current electronic project files for posting on the Project SharePoint site for access by utility companies. Electronic files showing existing or relocated utilities may then be delivered to the consultant for incorporation in project utility plans.

Additional utility coordination meetings may be required prior to project advertisement for construction. The necessity of such meetings may be determined by the Project Manager, Division Manager and the consultant and could include discussions related to constructability issues arising from utility conflicts and relocation schedules. Also, additional utility pre-construction meetings may be required prior to the start of construction. These meetings will be determined by the specific utility.





#### 9.3. Consultant Responsibilities & Deliverables

- 1) The consultant shall be responsible for providing one (1) scalable full-size PDF plan set (24" x 36") and DGN files to the Project Manager depicting the utility relocations for review prior to completing final construction plans.
- 2) The consultant shall include utility submittal mark-ups, provided by NDOT, in the project utility plans. The consultant shall take special care to include all notes and data provided by the utility companies in the final utility plans.
- 3) During the contract life of the project, at the request of the Project Manager, the consultant shall provide NDOT with current electronic files (DGN and PDF formats) for posting to SharePoint.
- 4) If the consultant has trouble transferring utility mark-up data into their electronic files, the consultant should request assistance from the Utility.
- 5) The consultant shall be responsible for monitoring changes to project plans that occur after the ROW plans submittal that may impact any utilities. If a plan change is required, the consultant shall notify the county at once and submit one (1) scalable full size PDF plan set (24" x 36") and DGN files for upload to SharePoint and notification to affected utility owner(s).
- 6) The consultant shall include in the final plans' submittal package a scalable full size PDF plan set (24" x 36") and DGN files of the final plans for distribution through SharePoint.
- 7) The consultant shall participate in project utility coordination meetings as required by NDOT.



## 10.0 PERMITS

Before submitting an application for a grading permit, the following environmental permits must be obtained or at least applied for:

- Tennessee Department of Environment and Conservation (TDEC)
  - TDEC Construction General Permit
  - Aquatic Resource Alteration Permit (ARAP)
  - Class V Injection Well (Sinkhole) Permit
- United States Army Corps of Engineers (USACE)
  - Section 404 Permits
- Coast Guard
- Tennessee Valley Authority (TVA)
  - 26a Permit
  - Letter of No Objection
- Metro Encroachment Permit (when necessary)
- TDOT Encroachment Permit (when necessary)

NDOT shall obtain all permits and assume all responsibilities of the permittee as indicated in the permits that relate to protection of the "waters of the United States" and/or "waters of the State of Tennessee" pursuant to the following:

1. [Section 404 of the Federal Clean Water Act \(33 U.S.C. §1344\)](#), and all implementing regulations, including without limitation regulations of the USACE governing permits for discharges of dredged or fill material into waters of the United States in [33 CFR Part 323](#);
2. [The Tennessee Water Quality Control Act \(T.C.A. 69-03-101, et seq.\)](#) and all implementing regulations, including without limitation the Rules of the Tennessee Department of Environment and Conservation (TDEC) governing the [National Pollutant Discharge Elimination System \(NPDES\) Permits in Chapter 1200-4-10](#) and the [Aquatic Resource Alteration Permit \(ARAP\) in Chapter 1200-4-7](#);
3. [Section 26a of the TVA Act of 1933 as amended \(49 Stat. 1079, 16 U. S. C. sec. 831y1.\)](#) and all implementing regulations, including without limitation the regulations of the TVA governing construction in the Tennessee River System in [18 C.F.R., Part 1304](#);
4. TDEC Class V Injection Well Permits ([T.C.A. 69-03-101 et seq.](#)) and all implementing guidance and regulations, including without limitation The Water Quality Control Act of 1977, as amended. Additional information at <https://www.tn.gov/environment/permit-permits/water-permits1/underground-injection-control-permit.html>;
5. Construction, reconstruction, and/or repair of bridges over navigable waterways could require a United States Coast Guard Bridge Permit. The regulations governing Coast Guard Bridge Permits are codified in [33 CFR 114-118](#). Additional information regarding this program can be obtained from the [Coast Guard Office of Bridge Administration](#).



## 10.1 Tree Removals for Linear Transportation Projects

The removal of trees for linear transportation projects may be subject to Tree Review Panel review and replacement standards in accordance with MCL 2.226. Trees located in the Metro Government rights-of-way will not count as removals unless located in a planting strip of at least four feet in width, or they are being removed for a new Metro Government sidewalk installation. Only removals of healthy trees over 6" in DBH (diameter at breast height) that total over 90 aggregate inches, or of any single specimen tree over 30 inches in DBH are subject to this requirement.

## 10.2 Ecology

To properly identify water resources (such as a stream, wetland, spring, pond with a stream either entering or leaving it, seep, etc.) that may be impacted by the project and thus would need environmental permits, the project site must be thoroughly investigated by the consultant's qualified biologist or other scientist with QHP (Qualified Hydrologic Professional) certification from the Tennessee Department of Environment and Conservation (TDEC). Water resource identification can be quite subtle, and what appears to be a simple ditch or a low area, for example, could be considered a jurisdictional stream or wetland to a biologist/scientist/QHP.

A PDF copy of the biologist Ecology Report must be emailed to the TDOT Environmental Division's Ecology Section at [TDOT.Env.Ecology@tn.gov](mailto:TDOT.Env.Ecology@tn.gov) with a PDF of a half size (11"x17") plans showing the water resource features (highlighted on the plans for easy identification showing the water resource features, present conditions, and the proposed project work). The TDOT Ecology Section will advise the local government and/or its consultant by email whether appropriate processes were followed in identifying water resources and State or Federally listed Endangered or Threatened species.

NEPA documents, particularly Categorical Exclusions, do not serve as an indication of whether water quality or storm water permits will be required on a project. A NEPA document does not replace the need for a detailed site review by a qualified biologist/scientist/QHP for the purpose of determining permit needs.

The Endangered Species Act requirements include Indiana bats and northern long eared bats and must be coordinated with the US Fish and Wildlife Service (USFW) whenever tree cutting is proposed for the project, and may involve surveys for these bats, which can only occur at a certain time of year. USFW coordination must be complete prior to all tree cutting.



#### 10.4 Water Quality Permits

NDOT shall obtain any additional permits required by the method of construction, including without limitation staging areas, haul roads, temporary channels or temporary ditches, or off-site waste and/or borrow areas. NDOT assumes all responsibilities of the permittee as indicated in the permits.

Impacts to water resources must be avoided or minimized to the extent practicable during the project planning and design phases. Avoiding and minimizing impacts will reduce permit requirements and associated costs, and potentially eliminate or reduce the need for compensatory mitigation. Compensatory mitigation can be difficult to acquire or develop and expensive to purchase and construct. Mitigation can cause significant project delays, particularly if third-party mitigation credits are not available for purchase and the permittee must provide "Permittee-Responsible Mitigation". NDOT must design, acquire, and pay for all mitigation required by regulatory agencies due to project impacts; and shall assume all responsibilities for this mitigation, including land acquisition, construction of the mitigation, multi-year monitoring for mitigation success, and correction of any failures.

It typically takes 30 to 90 days from permit application submittal to the agency issuance of general water quality permits (e.g., ARAP, 404). If individual permits are required, they can take six (6) months or more to receive, and usually require provisions for mitigation prior to receiving permits. Since all relevant permits must be obtained prior to beginning the construction phase, please plan ahead for these time frames when scheduling the project.

#### 10.5 Stormwater Grading Permit Coverage

In addition to the environmental permits listed above, NDOT must obtain stormwater permit coverage as required. As authorized by the Clean Water Act, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Nashville is a Municipal Separate Storm Sewer System (MS4) that is managed by Metro Water Services (MWS) Stormwater Division and regulated by the Tennessee Department of Environment and Conservation (TDEC) and our compliance is monitored by the NPDES. MWS has also developed appropriate plans and guidelines to meet the requirements of the [MS4 Permit](#) including a [Stormwater Management Manual](#) (SMM). The SMM requires the MWS Stormwater Division to issue a Grading Permit for land disturbing activities within Metro Nashville/Davidson County.

Information about the Grading Permit application process can be found at:

<https://www.nashville.gov/Water-Services/Developers/Stormwater-Review/Who-Needs-A-Grading-Permit.aspx>



Grading is defined as any operation or occurrence by which the existing site elevations are changed; or where any ground cover, natural or man-made, is removed; or any watercourse or body of water, either natural or man-made, is relocated on any site, thereby creating an unprotected area. This includes stripping, cutting, filling, stockpiling, or any combination thereof, and shall apply to the land in its cut or filled condition.

NDOT construction sites involving clearing, grading or excavation that result in an area of disturbance of one or more acres, and activities that result in the disturbance of less than one acre if it is part of a larger common plan of development or sale, must obtain a NPDES Stormwater Construction Permit from TDEC. If the project disturbs an acre or more of land, the consultant must prepare a Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) to send to TDEC requesting coverage under the NPDES Construction Stormwater General Permit. The consultant shall be knowledgeable of current sediment and erosion control requirements and shall adhere to those requirements, including, but not limited to, plan preparation, certification and seven (7) day field inspections after construction begins.

For projects requiring a Metro Grading Permit, the consultant shall schedule a Grading Permit pre-application meeting with MWS to discuss the proposed project. This will help to assure timely permit application preparation and review. This meeting will also aid in identifying water quality buffers and post-construction water quality requirements. During this meeting, MWS can determine if the project qualifies for an exemption and explain how technical guidelines and criteria should be applied.

After the pre-application meeting, the Consultant shall complete and submit to the MWS Development Review Section a Grading Permit application along with the project plans, the Grading Permit Application Checklist (see Appendix 10.A), and any other required submittals.

### 10.6 Class V Injection Well (Sinkhole) Permits

When a sinkhole is identified in or near the project impact area, a Class V Injection Well Permit may have to be obtained from TDEC. The consultant shall review the latest requirements from TDEC regarding sinkhole impacts to ensure that all applicable requirements have been met. Even inadvertent changes to the flow of surface waters to the sinkhole that may be caused by the project may require a permit application.

### 10.7 Encroachment Permits/License Agreements

An encroachment permit must be obtained from the appropriate agency when the project requires the construction, installation, maintenance, or operation of a road, driveway, sidewalk, bike path, or other non-roadway appurtenances (i.e. greenways, park benches, gateway signs, etc.) in or connection to public ROW. These permits or license agreements must be obtained prior to the completion of the final plans. Encroachment permits for Metro and TDOT ROWs can be found at:



#### **Metro Encroachment Permit:**

<https://www.nashville.gov/Public-Works/Permits/Right-of-Way-Permits.aspx>

#### **TDOT Highway Entrance Permit:**

<https://www.tn.gov/tdot/traffic-operations-division/traffic-engineering-office/highway-entrance-permits.html>

#### **TDOT Excess Land Agreement:**

<https://www.tn.gov/tdot/right-of-way-division/excess-land-office.html>

## 10.8 Railroad Agreements

During the planning and development phase of the project, it is advisable to assess the involvement of railroads. If there is a railroad or railroad property near the project limits, the consultant shall contact the Railroad or for State/Federal Project the TDOT State Railroad Coordinator. Mitigation may be required to address the railroad, and this will impact the funding and timeline of the project. The railroad issues need to be addressed as early as possible. Getting a railroad agreement/permit can take six (6) to nine (9) months or more depending on the mitigation.

In the Metro Nashville area, these are the railroads that may affect a project:

- CSX Transportation [CSXT]
- Nashville & Eastern Railroad Corporation [NERR]
- Nashville & Western Railroad Corporation [NWRR]
- R.J. Corman Railroad Company [RJCC]

See Chapter 5 of the [TDOT Utility Manual](#) for more information on railroad coordination.

For State/Federal project, see the Utility Relocation Procedures and the Procedures for Railroad Involvement in Chapter 6 of the [LGGM](#).





## 11. PRELIMINARY PLANS

The preliminary plans phase begins near the end of the concept/NEPA and public Involvement phases of the project. No work shall be done or invoiced for this phase until NDOT issues a written notice to proceed (NTP) for this phase. For state/federal projects, TDOT LDPO will issue the NTP.

All full size (24" x 36") construction plans for NDOT projects shall be developed using a plan sheet scale of 1" = 20', unless otherwise approved by the Chief Engineer (exceptions include cross sections, typical sections and detail sheets, etc.). The latest version of AutoCAD, at the time of the contract, is the only acceptable deliverable format for project CADD files unless the consultant has prior written concurrence from the Chief Engineer. State/Federal projects shall use design format acceptable to TDOT. Plans production shall be in accordance with the scope determined at the beginning of the project and the design criteria further defined in the concept phase and conform to current TDOT Electronic Data Guidelines and Plan Presentation requirements, with the following exceptions:

- 1) A detailed estimate is required.
- 2) NDOT projects will use TDOT's standard general notes and special notes unless specified otherwise on the NDOT details and specifications which can be found online at:

<https://www.nashville.gov/Public-Works/Developers/Details-and-Specifications.aspx>

TDOT's standard general notes and special notes are located online in their Design Guidelines:

<https://www.tn.gov/tdot/roadway-design/design-standards/design-guidelines.html>

Plans production for locally funded projects should emphasize simplicity and constructability. The consultant is encouraged to be proactive in simplifying the plans and reducing the overall sheet count while maintaining clarity of plan construction information. Departures from some TDOT requirements may be approved by NDOT if the deviation does not compromise plan clarity. The consultant is NOT to make modifications to the Standard General Notes. The Chief Engineer shall approve any modifications should it be necessary.

Project design shall adhere to all pertinent design standards, policies, requirements, criteria, specifications and details identified in Section 1.0 of this manual. Emphasis should be placed on providing a safe design, while minimizing impacts to ROW and maximizing project cost savings. During concept and design phases, the consultant shall look for innovative cost saving measures and present these suggestions to NDOT. The consultant shall be familiar with and use innovative means to conform to the project budget, when possible.

Design for bridges and other structures shall be in accordance with the current edition of the following publications: AASHTO "Standard Specification for Highway Bridges"; AASHTO "Guide



Specifications for Horizontally Curved Steel Girders – Highway Bridges”; AASHTO “Standard Specifications for Structural Supports for Highway Signs, and Luminaires and Traffic Signals”; AASHTO “Guide Specifications for Design and Construction of Segmental Concrete Bridges”; and all other applicable TDOT standards, details and specifications.

All lighting design shall be in accordance with current editions of AASHTO publications “Roadway Lighting Design Guide” and “Construction Manual for Highway Construction”.

Design decisions shall be documented in the project design notebook. This would include existing and proposed geometry, record of QA, variations from NDOT and TDOT standards, and decisions made in consultation with the Project Manager, other Metro Departments, or other stakeholders. Additionally, design calculations for alignments, curves, drainage, etc., shall be documented in the design notebook. This notebook shall be provided to NDOT upon request and made part of the final deliverables.

#### 11.1 Erosion Control Plans

Erosion Prevention and Sediment Control (EPSC) Plans shall be done in accordance with the EPSC permitting requirements outlined in Chapter 4 of the Stormwater Management Manual.

#### 11.2 Quality Assurance/Quality Control

The consultant is expected to incorporate an adequate quality assurance/quality control (QA/QC) plan into all its design processes in addition to using the NDOT or TDOT checklists. Although the NDOT performs a broad-level review of submitted plans, it is the consultant’s ultimate responsibility to provide details, quantities, and designs that are correct and accurate and do not compromise the safety of pedestrians and motorists traveling within the project corridor.

A critical component of the preliminary plans submittal is the clear establishment of right-of-way (ROW) requirements for the project so that ROW plans may be completed, and the acquisition processes begin. At the conclusion of the preliminary plans phase, the Project Manager will schedule a preliminary plans field review (PPFR) (including a required field visit). The meeting and field visit is typically held within a month after the consultant submits their PPFR deliverables. The Project Manager distributes the plans and sends invitation to those on the plan distribution list. The Project Manager will use the NDOT and/or TDOT Roadway Design Checklist, as appropriate, (See Appendix 11.A) to review the preliminary, ROW, and construction plans. The review team provides the Project Manager written comments after reviewing the plans. The Project Manager will provide the consultant all written comments before or at the start of the PPFR.

The consultant shall attend the PPFR with NDOT staff to discuss construction plans and project status. The consultant shall invite members of its team as deemed necessary. Team members may





include environmental, structural, signal, lighting, landscape architect, and other specialty disciplines as related to the project. Following the plan review meeting, a field visit is required.

Within two weeks following the PPRF, the consultant shall provide written responses to the comments provided by the review team.

### 11.3 Consultant Deliverables

- 1) For this submittal, the summary of quantity sheets shall have the anticipated items in them, but no quantities are required. The detailed estimate shall include the anticipated pay item numbers, but no quantities are required. Erosion control, signing and marking, and signal plans should be completed to the point where anticipated ROW may be established.
- 2) One (1) scalable full size PDF plan set (24" x 36"),
- 3) All most recent DGN files
- 4) Project cost estimate based on current construction plans with appropriate contingencies added per Appendix 6.B (1 PDF copy)
- 5) Updated project specific special provisions such as for lane closures and detours, liquidated damages, soils report special provisions, etc.
- 6) Completed Preliminary Plans checklist
- 7) QA letter certifying the Consultant's QA/QC process.



## 12. RIGHT-OF-WAY PLANS

Shortly after PPR, the Project Manager will issue NTP for right-of-way (ROW) plans. For state/federal projects, TDOT LPDO will issue the NTP. No work shall be done or invoiced for this phase until the Project Manager issues a written NTP for this phase. The primary focus of ROW plans production is to provide a quality set of drawings that accurately account for proposed ROW and easements needed for the project. ROW shown in the plans should provide an adequate work zone area on the property to construct and maintain the proposed transportation facility while minimizing impacts to property owners. The consultant shall develop the ROW plans in accordance with the ROW requirements.

### 12.1 Consultant Deliverables

#### 12.1.1. Right-of-Way Plans

- 1) For this submittal, the ROW plans shall include all elements indicated on the Roadway Plans Checklist (Appendix 11.A).
- 2) Preliminary ROW plans shall be submitted to the Project Manager for review by those on the NDOT plan distribution list. The consultant shall submit one (1) scalable full size PDF ROW plan set (24" x 36").
- 3) Completed ROW Plans checklist.
- 4) After all ROW redlines have been addressed, the consultant shall submit one (1) scalable full size PDF plan set (24" x 36") to the Project Manager electronically for printing and distribution according to NDOT plans distribution list. The cover sheet will be signed identifying the plan set as approved ROW plans. The county shall send a scanned copy of the signed cover sheet to the consultant for use in future revision submittals.
- 5) When ROW plans are approved, the consultant shall submit one (1) scalable full size PDF plan set (24" x 36") of the most current construction plans showing all plan changes since PPR.

#### 12.1.2. ROW Staking

The consultant shall perform ROW staking as outlined in the TDOT Survey Manual. The Project Manager will notify the consultant when staking services are ready to be performed.

#### 12.1.3. ROW Revisions



Even though best efforts may be made in project planning, ROW revisions are inevitable. ROW revisions shall be considered part of the consultant's ROW scope, and the revisions shall be delivered to the Project Manager in a timely manner. The consultant shall provide ROW data tables, including driveway easements, to NDOT in cases of condemnations. These requests shall also be considered a part of the ROW scope.

All ROW revisions should have a clear, concise, complete description on the revision summary sheet and a brief description on each plan sheet. The revision should include the date, parcel number, explanation for the revision, and the specific location of the revision as necessary.

When ROW revisions are submitted for review and approval, all affected sheets must be included. ROW revisions shall include:

- 1) A signed cover sheet
- 2) A revision summary sheet
- 3) all modified sheets in the plan set

If a single revision modifies more than half of the plan sheets, the consultant shall submit a complete scalable full size PDF ROW plan set (24" x 36"). The county may request a complete scalable full size PDF ROW plan set (24" x 36") after several minor revisions.

## 12.2 ROW Acquisition

ROW acquisition shall be a coordinated effort between the Project Manager, ROW consultant, Metro Public Property and Metro Legal. State/Federal Projects shall follow the ROW acquisition procedures in Chapter 6 of the TDOT Local Government Guidelines Manual. ROW plans revisions may be needed during the acquisition process to accommodate changes negotiated with property owners. The ROW consultant shall perform appraisals, review appraisals, negotiations, closings, relocation and property management services in accordance with the ROW Manager Scope of Services.

### 12.2.1 ROW Acquisition Approval

Prior to acquiring any easement or parcel of land, ROW acquisition approval must be granted by Metro Council via ordinance. The Project Manager shall get a mandatory referral from Metro Planning and prepare legislation for a ROW Ordinance (See example in Appendix 12.A) to acquire ROW and easements for the project. See Appendix 12.B for



Legislative and Mandatory Referral processes. The ROW Acquisition Table and ROW Vicinity Map for the project will need to be submitted with the Mandatory Referral and legislative tracking form.

#### 12.2.2 Legal Descriptions and Exhibits

After completion of the ROW plans, the design or ROW consultant shall create legal descriptions and exhibits for each affected Tract. Only construction easements shall be temporary. All other easements (ROW, slope, drainage, air rights, railroad and utility) shall be permanent.

#### 12.2.3 Compliance Requirements

All projects under NDOT should be developed in compliance with federal laws, rules, regulations to ensure eligibility for federal grants even if the grant participation is only for construction. Projects involving ROW acquisition must comply with federal regulations listed below and others to be eligible for federal funds. During the ROW and Easement acquisition process, the Acquisition Team, must comply with the following:

For all projects,

- Uniform Relocation Assistance and Real Property Policies Act (Uniform Act, 25 CFR Part 24)
- Uniform Standards of Professional Appraisal Practice (USPAP)
- Public Property Administration Policy (when applicable):  
<https://www.nashville.gov/Portals/0/SiteContent/Finance/docs/PublicPropertyAdministrationPolicy.pdf>

Additionally, for projects on State Routes,

- TDOT Appraisal Guidelines (Guidelines):  
<https://www.tn.gov/tdot/right-of-way-division/appraisal-office.html>
- TDOT Right-of-Way Procedures Manual (TDOT ROW Manual):  
[https://www.tn.gov/content/dam/tn/tdot/programdevelopment/localprograms/home-page/TDOT\\_ROW\\_Procedures\\_Manual.pdf](https://www.tn.gov/content/dam/tn/tdot/programdevelopment/localprograms/home-page/TDOT_ROW_Procedures_Manual.pdf)

#### 12.2.4 ROW Acquisition Notifications



When using a consultant, no ROW acquisitions (appraisals, negotiations, or closings) shall begin without the issuance of an NTP from NDOT or TDOT. Once the NTP has been issued, the Project Manager shall send a ROW acquisition notification letter (See example in Appendix 11.G) to each property owner notifying them that the ROW acquisition process has started and informing them of the consultant Metro has hired to facilitate the process. If an extended period of time has lapsed between phases, an additional notification letter may need to be sent to the property owners letting them know that a particular phase has started and who will facilitate that phase.

#### 12.2.5 Appraisals & Review Appraisals

**Market Analysis/Market Study.** A market analysis or market study may be prepared for donated properties and/or properties where the estimated compensation is \$10,000 or less.

For State/Federally funded projects, Metro Public Property will be responsible for preparing appraisal waivers or Nominal Payment Parcels.

**Appraisals.** Formal or formal part-affected appraisals shall be conducted for properties where the estimated compensation is over \$10,000. Metro's Public Property Administration Policy requires appraisals to be conducted when there will be an exchange of ROW between Metro and a property owner. Restricted use or summary appraisal reports are not acceptable for Metro funded projects or projects on State Routes where ROW must be deeded back to the State.

**Review Appraisals.** A review appraisal is required to establish the opinion of fair market value to be offered to the property owner, ensure appraisals are performed in accordance with the Uniform Act and the USPAP, and to establish just compensation by approval of the appraisal. Just Compensation Documents must be signed by the review appraiser and the Metro Public Property Administration Director.

#### 12.2.6 ROW Staking

ROW staking may be requested by the property owner or Project Manager during the Appraisal or Negotiations phase to clarify the exact location of the proposed ROW or easement in relation to the existing property line or a specific feature (i.e. driveway, walkway, landscaping, sign etc.) on the property. Staking shall be performed by Tennessee Professional Land Surveyor or Professional Engineer.

Stakes shall be set so that an observer can easily see from one stake to the other. When an obstruction is encountered (building, large tree, boulder, etc.), a stake shall be set adjacent to and on each side.



When possible, a standard 1" x 2" x 36" stake with the top 12 inches painted red shall be used. When a R.O.W. corner falls on pavement, a nail shall be set and painted. Since these points can be expected to be semi-permanent the same degree of accuracy used on the survey will apply.

The method used to establish R.O.W. shall be based on sound engineering principles. Iron pins and/or R.O.W. stakes will be set as follows:

- At R.O.W. angle points (stakes and pins)
- At the beginning and end of each radius (stakes and pins)
- At the intersection of property lines and R.O.W. lines (stakes only)
- Near all structures which are positioned close to the margin, so that the relationship of the R.O.W. limit to the object can be determined visually (stakes only)
- When stakes are hidden by vegetation (e.g., cultivated areas, weed cover, thicket, etc.), they shall be marked with a witness flag which will protrude above the expected growth of vegetation.

R.O.W. stakes will be marked with description / station / offset. The following standard abbreviations shall be used (Reference TDOT Standard Drawing RD-A-1):

- PRES - Present
- PROP - Proposed
- R.O.W. or R/W - Right-of-Way
- ESMT - Easement
- BEG R - Begin Radius
- END R - End Radius
- PERM - Permanent
- COR - Corner

Present R.O.W. shall not be staked unless necessary for the clarification.

The point at which the centerlines of the proposed alignment and any existing roads cross shall be marked when staking R.O.W. The marking shall consist of a pavement nail, with flagging, circled by pavement marking paint with the centerline station painted on the pavement nearby.

Easements - Permanent easements shall be staked using the same procedures used in R.O.W. staking. Temporary easements shall be staked as accurately as supplied information permits (stakes only).

#### 12.2.7 Negotiations

The Negotiator shall prepare all written offers (monetary, non-monetary, and uneconomic remnant) and counter offers on the Approved Offer Form (Form 2) for signature by the Public Property Administration Director. The Form 2 documents shall be submitted to the Project Manager to obtain the signatures and return the documents to the Negotiator.



The Negotiator shall schedule a meeting with the property owner in person whenever possible to discuss the acquisition. A copy of the appraisal, legal description and exhibit of the ROW/easement to be acquired, and the approved offer shall be given to the property owner at the meeting. Any counteroffers shall be relayed back to the Project Manager for consideration and approval. Any offers to donate the ROW/easement shall be accepted from the property owners. Donated properties will have to be officially accepted by the Public Property Administration Director or the NDOT Director.

The Negotiator shall notify the Project Manager as soon as possible of any negotiation that results in the need to revise the plans. The Project Manager will notify the design Consultant of the needed revisions within two (2) days of receiving the terms of the revision from the Negotiator.

Right-of-Entry (ROE) forms shall be obtained from property owners when NDOT or it's contractor will need to access a property for utility relocations, or other access needs during the project. ROEs for construction are not recommended by Metro Legal but may be used on a case-by-case basis. Metro Legal prefers a Temporary Construction Easement be obtained prior to any construction activity on property where ROW or easement is not being acquired.

Once all Form 2s have been signed by the property owner, donation documents, agreements of sale and ROE forms have been received, and turned over to the closing agent, the Negotiation phase will be complete.

#### 12.2.8 Closings & Recordings

The closing agent/attorney or title company will need to set up an escrow account in the name of the Metropolitan Government of Nashville & Davidson County for the transfer of property owner payments and recording fees. The Closing Agent will send a letter to the property owners when closing documents are prepared and request, they schedule a time to close. Prior to this notification, the Closing Agent will send the buyer's (ALTA) statements to the Project Manager to obtain the appropriate Metro signature. The buyer's statements must be signed by the Public Property Administration Director. The Project Manager shall use the signed ALTA statements as the invoice from the Closing Agent for the property owner payment and recording fee. This shall be processed through CFMS as a payment voucher. Once received, the Closing Agent will issue payment to the property owner at their scheduled closing and will submit the original closing documents to the Registrar of Deeds (ROD) for recording. The ROD will return the originals to the closing agent and return them to the Project Manager. The Project Manager will submit the original closing documents to the Metro Clerk for filing.

#### 12.2.9 Condemnations & Settlements





Metro Legal Department will handle all condemnations, administrative and court settlements on local streets. If condemnations involve a state route, the State Attorney General shall handle the case in coordination with the Metro Legal Department. The negotiator may be needed to complete agreements of sale or other documents necessary for those processes.

### 12.3 GIS Update

This section is reserved for a future update.



## 13. FINAL CONSTRUCTION PLANS

The development of final construction plans begins shortly after PPFR and runs simultaneously with the right-of-way (ROW) plan production and acquisition. No separate NTP will be issued for construction plans development. Work can continue based upon the Design NTP. Final plans shall incorporate all applicable comments from the PPFR and focus on refinement of all elements in preparation for construction. The plans shall be biddable including all quantities in the summary of quantities and detailed estimate.

During this phase, the consultant shall attend final construction plan field review, constructability review, pre-bid, and pre-construction meetings in accordance with the contract agreement.

### 13.1 Final Construction Plan Field Review

The final construction plan field review (CPFR) meeting will be held two to three weeks after the consultant submits the final construction plans, specifications and estimate (PS&E). The Project Manager shall invite team members, per the NDOT plan distribution list, and appropriate members of the consultant team to the meeting. The review team shall review the final PS&E package in advance of the meeting for:

- Constructability
- Biddability
- adherence to ROW commitments and stipulations
- special provisions
- potential discrepancies between the plans and specifications
- accurate and complete pay items and quantities
- staging, and etc.

The team will provide written comments to the Project Manager after reviewing the plans. The Project Manager will provide all written comments to the consultant before or at the start of CPFR. The field visit shall be done at CPFR to ensure no additional changes have occurred at the project location that would affect the constructability of the project or that needs to be addressed in the final construction plans. Within two weeks following the CPFR, the consultant shall provide written responses to the comments provided by the NDOT review team and/or incorporate them into the plans, construction notes, quantities, or specifications as necessary.



#### 13.1.1. Consultant Deliverables

- 1) PPRF redline markups from NDOT
- 2) Final Construction Plans - One (1) scalable full-size PDF (24" x 36"),
- 3) All most recent DGN files
- 4) Project cost estimate based on current construction plans with appropriate contingencies added per Appendix 6.B (1 PDF and 1 Excel copy)
- 5) Updated project specific special provisions
- 6) Completed Construction Plans checklist.
- 7) Quality assurance (QA) letter certifying the consultant's quality assurance/quality control (QA/QC) process.

#### 13.2 Constructability Review

The primary focus of the constructability review will be on quantities, pay items, biddability, ROW commitments and stipulations, special provisions, and potential discrepancies between the plans and specifications. This review shall occur at least 30 days prior to submitting the solicitation packet to Metro Procurement to advertise for construction bids. The consultant might not attend this meeting for smaller projects. However, all comments are sent to the consultant for final plan changes. All comments must be addressed two (2) weeks prior to advertisement for construction bids.

At the constructability review, the Project Manager will provide a completed pre-bid checklist (See Appendix 13.A) to the Division Manager or Chief Engineer for signatures. The Project Manager shall not begin the bid phase without a signed pre-bid checklist for the project.

#### 13.2.1. Consultant Deliverables

- 1) CPFR redline markups from NDOT
- 2) One (1) Scalable Full-Size PDF (24" x 36") Final Construction Plan Set,
- 3) Project cost estimate (including MWS pay items) based on current Metro or TDOT bid tabs. (1 PDF and 1 Excel copy)
- 4) Final project specific special provisions.
- 5) Completed Constructability Review checklist (See Appendix 13.B)



#### 13.3 Final Construction Plans (Bid Set)

Two weeks prior to advertisement for construction bids, the consultant shall provide to the Project Manager the following final construction documents for bid with all constructability review comments incorporated:

- 1) Constructability review redline markups from NDOT.
- 2) One (1) scalable full size PDF plan set (24" x 36") as final biddable construction plans.
- 3) Final Plans shall include a cover sheet that is stamped, signed, and dated by a registered Tennessee Professional Engineer.
- 4) If plans are satisfactory, the final bid set shall be signed by the Chief Engineer. Once signed, all changes thereafter are construction revisions and must be documented as such. The Project Manager shall return a scanned copy of the cover sheet to the consultant for use in case of revisions.
- 5) Final project cost estimate (included MWS pay items) based on current construction plans. (1 PDF and 1 Excel copy)



## 14. CONSTRUCTION

The consultant shall be responsible for design re-calculations, plan modifications, and distribution of plan revisions because of its own errors and omissions. Under the project construction phase, the consultant shall make minor changes to the plans during the construction process, as requested and approved by the Project Manager. Each revision submittal to the Project Manager shall be distributed within NDOT per the NDOT plans distribution list.

During the solicitation process, following the project advertisement, any necessary revisions to the final plans shall be done by the consultant through addendums to the solicitation to produce conformed final plans for construction prior to the bid opening date. The consultant shall submit one (1) scalable full-size PDF (24" x 36") plan set or revised sheet(s). There shall be no additional payment for this work. Performance of this work shall be at the direction of the Project Manager.

At no time shall the integrity of the "As Bid" plan information, shown on the original construction plans, be altered by deleting or erasing as a result of any "Use on Construction" revision. Changes to the information shown on the original plan sheets may be accomplished by copying the original sheet, labeling the copy as "Use on Construction" and revising the information as required. All revisions shall be documented on the revision summary sheet and noted on the sheet that has been revised. Any quantities or additional pay items required are to be listed on the quantities required on construction or by amendment sheet. The consultant shall coordinate all revisions with the utilities and verify that revisions do not violate any approved permits or ROW acquisitions.

All contracts should have a construction phase that includes time for the consultant to participate in the pre-bid and pre-construction meetings, review shop drawings, prepare plan revisions arising from changed field conditions, attend project meetings, and provide design consultations. Pre-authorization from the Project Manager for all charges to this phase is required. Shop drawing review shall be completed within two weeks from receipt of plans from the Contractor.



## 15. MISCELLANEOUS PROJECT RELATED SERVICES

During a project design, items may be discovered that are needed to complete a project milestone or development phase and requires the consultant to provide additional services that are outside the scope of the original agreement. To compensate for such, NDOT will include a Miscellaneous Services line item in most agreements. This line item may not be used without written approval and notice to proceed (NTP) by the Division Manager or Chief Engineer.

For use of miscellaneous services, the consultant shall submit a scope and fee to the Project Manager. The scope should not only outline the work to be done, but it shall also justify why the additional work is necessary for the completion of the project milestone or phase. The Project Manager shall review the scope and fee prior to submitting it to the Division Manager or Chief Engineer. They shall review the documents in a timely manner, and if acceptable and justifiable, approve the scope and fee and give the consultant an NTP. Otherwise, the Division Manager or Chief Engineer will provide comments to further the negotiation.

At no time shall the consultant perform work to be invoiced to miscellaneous services without written approval and NTP by the Division Manager or Chief Engineer.



## 16. PROJECT CLOSEOUT

This project closeout submittal is necessary to document the final plans and all correspondence regarding the project. The closeout will occur in two phases: Project Development and Construction closeouts.

### 16.1 Pre-Construction Closeout

After the consultant has produced conformed final plans for construction, the consultant shall submit a project development closeout package to the Project Manager.

The closeout submittal shall include but is not limited to:

- 1) All pertinent project correspondence, including e-mails, faxes, and transmittals during the project development. The consultant shall include correspondence where decisions were made. **(PDF Format)**
- 2) Documentation of any design variances for the project. **(PDF Format)**
- 3) Copy of approved concept report **(PDF Format)**
- 4) Copy of final traffic study or traffic report **(PDF Format)**
- 5) Copy of signal warrant documentation **(PDF Format)**
- 6) All public involvement (PIOH) information, including original comments and letters from citizens. **(PDF Format)**
- 7) Survey file of all survey data collected in the field that includes point number, Northing, Easting, elevation, and descriptor or code in a comma-delimited format. Also include proposed ROW and easement points along with the design centerline control points, such as begin and end project, intersection points, PCs, PIs and Pts.
- 8) All grading permit documents including drainage calculations **(PDF Format)**
- 9) All AutoCAD files
- 10) Copy of all approved permits (404, ARAP, Encroachment, Erosion Control, etc.) **(PDF Format)**
- 11) Copy of approved environmental document (NEPA, Environmental Review, etc.) **(PDF Format)**
- 12) Copy of final geotechnical reports **(PDF Format)**
- 13) Copy of final hydraulic/hydrology reports (including CLOMR, LOMR, etc.) **(PDF Format)**
- 14) Final project cost estimate **(PDF and Excel Formats)**
- 15) Scalable full size PDF set (24" x 36") of conformed final plans.





#### 16.2 Construction Closeout

When construction is deemed substantially complete, the Consultant shall submit a Construction Closeout package to NDOT.

The closeout submittal shall include but is not limited to:

- 1) All pertinent project correspondence, including e-mails, faxes, and transmittals during Construction. The consultant shall include correspondence where decisions were made. **(PDF Format)**
- 2) All AutoCAD Files (if changed from project development closeout)
- 3) Drainage calculations from revisions (including MS4 Calculations) **(PDF Format)**
- 4) Copy of all permit revisions (404, ARAP, Encroachment, Erosion Control, etc.) **(PDF Format)**
- 5) Copy of all approved shop drawings **(PDF Format)**
- 6) Scalable full-size PDF set (24" x 36") of construction final plans including all revisions
- 7) If required in the consultant contract, separate scalable full size PDF set (24" x 36") of as-built plans for the roadway, bridges and storm drainage system. (Typically, the as-built plans will be provided by the construction contractor.)



## 17. STREET DESIGN GUIDELINES

NDOT Projects shall be designed and constructed using the Metro details and specifications and the Standard Drawings available from the Tennessee Department of Transportation. Metro details and specifications can be found online at: <https://www.nashville.gov/Public-Works/Developers/Details-and-Specifications.aspx>

In addition, development streets that are to be turned over to and accepted by Metro for maintenance and public use in the ROW shall also adhere to the Subdivision Street Design Standards and Specifications. These standards and specifications shall be used to provide reasonable design and construction guidelines for all streets, roads, alleys, sidewalks, and transportation infrastructure within the Metropolitan area, promoting Complete Streets principles, economy, durability, safe, and efficient traffic movement without undue congestion. The following standards and guidelines for street design can be found online at <https://www.nashville.gov/Public-Works/Developers.aspx>:

- [Traffic Impact Study Guidelines](#)
- [Subdivision Street Design Standards and Specifications](#)
- [Complete Streets Guidelines and Policy](#)
- [Plantings in the Right-of-Way](#)
- [Specialty Street Name Signs and Posts](#)
- [Stop Line Pavement Markings Policy](#)
- [Pre-Construction Agreement](#)

The standards and regulations are implemented for the interest of safety, convenience, and prosperity of the community in the use of the streets and roads within the Metropolitan Area. These rules and regulations govern the construction of both public and private roads, streets, and alleys, and shall apply to all areas within the jurisdiction of the Metropolitan Government.

Areas not included are the incorporated boundaries of Belle Meade, Berry Hill, Forest Hills, Goodlettsville, Oak Hill and Lakewood.

### 17.1 Water and Sewer Locations within Right-of-Way

This section is reserved for a future update.

### 17.2 Working Protocol Between NDOT and Metro Nashville School District

This section is reserved for a future update.



### 17.3 Right-of-Way Monumentation by Construction Contractors

The contractor shall be responsible for monumentation upon completion of the project and prior to the acceptance by NDOT. Monumentation shall be in accordance with the provisions of this section.

#### 17.3.1. Right-of-Way Markers

Concrete right-of-way markers shall be placed at each P.C., P.T., right-of-way break and at additional points as shown on the right-of-way plans. All right-of-way monumentation by concrete maker shall meet the requirements of TDOT standard 708. No monument shall be reduced in length and all right-of-way monuments must have the "X" in the top.

If right-of-way markers fall within a paved area, the following shall apply:

- If within an asphalt drive, an iron pin of #4 (1/2") or larger by minimum length of 18" shall be set in lieu of a concrete right-of-way marker
- If within a concrete drive, a brass disk 3" in diameter shall be set in the concrete by appropriate methods including but not limited to drilling and using a fast-setting epoxy to grout the disk in. The disk should be stamped "Nashville DOT" with the appropriate station and distance.

Iron pins consisting of no. 4 reinforced bars (rebar) with a minimum length of 18 inches, shall be replaced at the front corners of existing right-of-way for parcels in which temporary and permanent easements have been acquired. (Temporary and permanent easements are construction, drainage, and any other easement necessary for the construction of the project.) Stake-out data for the iron pins shall consist of stations and offsets indicated on the right-of-way plans for the project.

#### 17.3.2. Documentation of Compliance

After completion of the monumentation, a set of right-of-way plans must be sealed and certified by a Tennessee Registered Land Surveyor as to the work being performed under his/her supervision and that the placement of the monuments has been field verified, and meets minimum technical standards as specified by Tennessee law.

A certified copy of field notes, computer printouts including all raw data collector files, raw files, and adjusted coordinate files, traverse, and level closures (raw and adjusted), data disk and level peg, tribrach and instrument adjustments shall be provided to NDOT as records for



compliance with this provision. Traverses and level nets shall be reduced by a least squares adjustment program. Scale and grid factors shall be calculated and shown on a control monument information form with other required information. Datum shall be shown and based on the original datum, whether horizontal or vertical.



## APPENDICES

Appendix 1.A – Example Capital Planning Report

Appendix 2.A – Equity in Design Form

Appendix 3.A – Solicitation Request Form

Appendix 3.B – EBO Cost Breakdown

Appendix 3.C – TDOT LPDO Work Order Assignment Evaluation Form

Appendix 3.D – TDOT Deposit Request Letter

Appendix 3.E – Consultant Performance Evaluation

Appendix 5.A – Example Metro Invoice Template and Instructions

Appendix 5.B – Sample Survey Notification Letter

Appendix 6.A – Concept Report

Appendix 6.B – Cost Estimate Contingencies

Appendix 10.A – Grading Permit Application Checklist

Appendix 11.A – Roadway Design Checklist

Appendix 12.A – ROW Ordinance

Appendix 12.B – Legislative and Mandatory Referral Processes

Appendix 13.A – Pre-Bid Checklist

Appendix 13.B – Constructability Review Checklist



**NDOT**

Appendix 1.A – Example Capital Planning Report

*Metro Nashville*  
**PUBLIC WORKS**

750 South Fifth Street  
Nashville, TN 37206

CAPITAL PROJECT PLANNING REPORT (CPR)

Andrew Jackson Parkway at Old Lebanon Dirt Road

Install Right Turn Lane  
Project Number 06PW0030

Prepared by:

Robert W. Weithofer, P.E.

March 2008

Approved by



Date

3/08



# TABLE OF CONTENTS

<b>Project description</b> .....	<b>1</b>
Location .....	1
Detailed description and justification .....	1
Requested by.....	1
Request number .....	1
<b>Existing conditions</b> .....	<b>1</b>
General information.....	1
Geometric layout.....	2
Traffic volumes.....	2
Traffic controls.....	3
Traffic speed and characteristics.....	3
Other projects .....	3
Request history.....	4
<b>Studies</b> .....	<b>5</b>
Crash study .....	5
Capacity.....	6
<b>Planning Review</b> .....	<b>6</b>
Sidewalk and Bikeway Plan information .....	6
Community and Neighborhood Plan information .....	6
Anticipated developments.....	7
<b>Analysis</b> .....	<b>7</b>
<b>Proposed Project</b> .....	<b>8</b>
Description and scope .....	8
Impacts .....	9
Cost Estimate .....	10
Benefit vs. Cost .....	10
Alternatives.....	10
<b>Conclusion</b> .....	<b>10</b>
<b>Functional layout</b> .....	<b>12</b>
<b>Cost estimate</b> .....	<b>13</b>
<b>EXHIBITS</b> .....	<b>14</b>
Exhibit 1. Vicinity map.....	15
Exhibit 2. Aerial view .....	16
Exhibit 3. Other Photographs.....	17

Exhibit 4. Existing Conditions ..... 22  
Exhibit 5. Traffic Volumes..... 23  
Exhibit 6. Crash Data ..... 36  
Exhibit 7. Existing LOS Calculations ..... 37  
Exhibit 8. Sidewalk Plan..... 41  
Exhibit 9. Bikeway Plan..... 42  
Exhibit 10. Community Plan..... 43  
Exhibit 11. LOS Calculations Proposed Improvements..... 49  
Exhibit 12. LOS Calculations Additional Improvements ..... 53  
Exhibit 13. Cost Estimate..... 57  
Exhibit 14. Calculation of Value of Benefits ..... 62  
Exhibit 15. Peer Review ..... 63

## **Project description**

Location: Andrew Jackson Parkway at Old Lebanon Dirt Road

Detailed description and justification: Install Right Turn Lane

Requested by: Council Member

Request number: (none/not applicable)

## **Existing conditions**

### General information

This is a complex of two intersection of three arterials; Andrew Jackson Parkway, Old Lebanon Dirt Road and Chandler Road. Because of the proximity of these two intersections, the fact that the traffic signals are operated by a single controller and the needed coordination between the two, this study will investigate them as a single intersection.

Andrew Jackson Parkway is designated as a four lane urban arterial. It intersects with Old Hickory Blvd. approximately 0.3 miles southwest of this intersection. Andrew Jackson Parkway intersects with Lebanon Pike, US70, approximately 2 miles north of this intersection. It continues on into Wilson County via Saundersville Road.

Old Lebanon Dirt Road is designated as a two lane urban arterial east of Andrew Jackson Parkway. Approximately 0.8 miles to the east, it intersects with Tulip Grove Road. It then continues on into Wilson County.

West of Andrew Jackson Parkway Old Lebanon Dirt Road is designated as a local roadway. It ends approximately 0.2 miles west of this intersection near Stoner's Creek. It serves as the only access to three residences and the fields of a horse farm.

Chandler Road intersects Old Lebanon Dirt Road 150' east of the intersection of Old Lebanon Dirt Road and Andrew Jackson Parkway. Chandler Road is designated as a four lane urban arterial. Approximately 1.2 miles northeast of this intersection, it intersects with Tulip Grove Road. Chandler Road then continues on into Wilson County.

The Nashville and Eastern Railroad tracks cross Old Lebanon Dirt Road approximately 170' west of this intersection and cross Andrew Jackson Parkway approximately 280' north of the intersection. They then parallel Chandler Road in a northeast direction. There is a Music City Star station on the east side of Andrew Jackson Parkway just north of the tracks. The Music City Star provides rush hour commuter rail service between the City of Lebanon and downtown Nashville.

The land use south of Old Lebanon Dirt Road and west of Chandler Road is commercial. The land use for the rest of the area is residential with the exception of the Music City Star station.

Andrew Jackson Parkway & Old Lebanon Dirt Road

### Geometric layout

Both approaches of Andrew Jackson Parkway at the intersection consist of three lanes; a left turn lane, a through lane and a through-right turn lane. Both approaches of Old Lebanon Dirt Road at Andrew Jackson Parkway consist of a through-left turn lane and a yield controlled right turn lane. Old Lebanon Dirt Road westbound at Chandler Road is a single lane. Eastbound Old Lebanon Dirt Road at Chandler Road consists of a left turn lane and a through lane. Chandler Road consists of a left turn lane and a right turn lane at the intersection.

There are sidewalks on the east side of Chandler Road and the south side of Old Lebanon Dirt Road east of Chandler Road.

There is curb and gutter on all roadways except for Old Lebanon Dirt Road west of Andrew Jackson Parkway.

### Traffic volumes

TDOT has a Coverage Count Station on Old Lebanon Dirt Road near the Wilson County Line. It shows that in the past 20 years traffic has increased by 139%. This is almost 5% per year. In the past five years, traffic at this station has increased 2.5%. This indicates that the growth rate has leveled off.

This history is confirmed by a TDOT Coverage Count Station on Old Hickory Blvd. The 20 year growth rate was smaller at 88% or 3.2% per year. The most recent 5 year growth rate is 5% or 1% per year. This confirms both the overall rapid growth in the past 20 years and the recent slow down in that growth.

There is a TDOT coverage station on Andrew Jackson Pkwy. north of Highland View Drive. This was considered too distant to be utilized in evaluating traffic conditions at the subject intersection.

Although the traffic growth rate has slowed in recent years, there is still substantial undeveloped tracts of land in both Metro and Mount Juliet. Some of these tracts have approved development plans that are expected to be implemented in the next five years. This intersection will continue to be impacted by these developments.

Counts conducted by Metro in 2006 and 2008 reveal that almost 29,000 vehicles pass through this intersection daily.

In 2006, Kimley-Horn and Associates, Inc. (KHA) conducted a signal optimization study of the Hermitage area. This was part of a project that encompassed the majority of the signalized corridors in Davidson County. As part of this work, KHA had a sub consultant Stammer Engineering conduct turning movement counts at this location. During analysis of the data, it was determined that the counts did not balance internally between the intersections. This was corrected and both the original count data and the balanced count data are provided in the exhibits. These counts indicate that 2,170 vehicles in the AM pass through the intersection. The corresponding volume in the PM is 2,690.

### Traffic controls

This intersection is controlled by a traffic signal. This signal was placed in service on November 25, 1991.

There is a crosswalk across Old Lebanon Dirt Road east of Chandler Road. This is within the signal control area. However, there are no pedestrian indications for this crosswalk.

The eastbound and westbound right turns from Old Lebanon Dirt Road to Andrew Jackson Parkway are controlled by yield signs.

### Traffic speed and characteristics

Andrew Jackson Parkway from Old Hickory Blvd. to Highland View Drive was designated as 40 MPH in 1979. Old Lebanon Dirt Road from Andrew Jackson Parkway to the Wilson County line was designated as 40 MPH in 1987. Old Lebanon Dirt Road west of Andrew Jackson Parkway has a statutory speed limit of 30 MPH. Chandler Road from Andrew Jackson Parkway to the Wilson County Line was designated as 40 MPH in 1979. Each of these speed limits is appropriately signed in the field.

Trucks in excess of 5,000 pounds were prohibited on Andrew Jackson Parkway from Old Hickory Blvd. to Lebanon Road in 1971. This restriction is appropriately signed in the field.

### Other projects

A brief explanation of the transportation funding process may help in understanding the following discussion of other transportation projects that may affect this intersection.

The Metropolitan Planning Organization (MPO) Long Range Transportation Plan (LRTP) is part of a regional process mandated by Federal law. It is a transportation planning document that lists projects that will address the transportation needs of the region. It lists projects for various transportation needs including roadway widening, new roadways, mass transit, car pooling, greenways, etc. In most cases, projects on the LRTP are proposed for federal or state funding. The LRTP lists all project expected to be started in the next 20 years. The current plan has a planning horizon of 2030. It is sort of a wish list because it is not fiscally constrained nor does it grant funding to any of the projects.

The Transportation Improvement Program (TIP) is the second step in the process. It lists projects that are funded to be started in the next three fiscal years. The current plan lists projects from 2008 through 2011. The TIP is fiscally constrained so it lists projects that are actually funded.

Metro has the Capital Improvements Budget (CIB). This program lists all needed capital improvements within Metro. There is a wide range of projects including roadway improvements, new schools, building repairs, etc. Again, this is sort of a wish list since it is not fiscally constrained nor are projects granted funding because they are on the list. Projects in the TIP are included in the CIB.

The CIB has another project related to this intersection. It is 97PW074 "Andrew Jackson Parkway - Intersection Improvements Chandler RD/Old Lebanon Road" This project is shown as "In Progress." The funding is \$1,170,000; \$936,000 in proposed Federal funds and \$234,000 in local funds. This project was added to the TIP with a more specific project description and updated cost estimate described in the following paragraph.

TIP. TIP#020 Andrew Jackson Parkway Intersection of Chandler Road/Old Lebanon Dirt Road Intersection Improvements: Realign 5-point intersection to 4-point, align Chandler to connect into Andrew Jackson instead of Old Lebanon Dirt Rd; improve signalization. The funding is \$2,335,625, \$1,868,500 from CMAQ and \$467,125 in local funding. The schedule shows 2008 for PE (preliminary engineering) & ROW. Construction is shown to start in 2010.

The LRTP lists a project #1012, Chandler Road Andrew Jackson Pkwy to Wilson County Line. This project would widen Chandler Road from two to four lanes. The estimated cost is \$8,900,000. It is shown to be started in 2016 and would include improvements to bicycle and pedestrian facilities in this corridor.

The project, for which this report is being prepared, CIB number 06PW0030, first appeared in the 2005-2006 CIB, which was approved in 2005. It is described as a "new project initiated by a Council Member." Unlike the previous project 97PW074, the new project specifically called for a right turn lane. However, the previous project remained in the CIB. The new project has not been funded.

Obviously all of these projects are related because they involve the same roadway. They also indicate that roadway improvements in this area have been a recognized need for many years.

The LRTP widening project is a perceived long range need. It is not funded and will be reevaluated with each LRTP update.

The TIP project is a funded project to realign Chandler Road and eliminate the current connection to Old Lebanon Dirt Road. This project has been under contract with TDOT since 1998. Design was initially held due to the potential impacts on this project of the Music City Star commuter route design. Discussions with the Nashville & Eastern Roadway indicate that it will be very difficult to get their permission for a new at grade crossing that this project requires. The scope of this projects and alternatives are being evaluated. This analysis will be utilized in that evaluation.

None of these projects are mutually exclusive. The existence of all of these projects is reflected in the analysis of this project.

#### Request history

A review of requests for the past five years was conducted. There were a number of requests related to signal timing that are indicative of an intersection operating at or near capacity. Most of these requests occurred prior to the KHA signal optimization at this intersection.

The following requests specifically were related to the proposed project.

Andrew Jackson Parkway & Old Lebanon Dirt Road

On October 21, 2003 Council Member Jim Gotto requested "Complete a field investigation to install a right turn lane on Andrew Jackson Parkway on Old Lebanon Dirt Road." The response was "This intersection is included in current Transportation Improvement Program with funding programmed 2005 (R.O.W.) and 2006 (construction). Design features including turn lanes are to be determined."

On April 15, 2005 a request was received at the Mayor's Night Out about this intersection. It states "Traffic issue with the right turn lane, causing congestion." The request contained no record of the person's name or phone number, so a response was not possible. The findings state that "This location already has a Capital Project (97PW074) for improvements to this intersection. This project is funded and preliminary design is underway." See the previous section for a description of the Capital Project.

On January 12, 2006 Council Member Gotto requested "to have the left turning lane going east on Andrew Jackson turned into a straight lane, and the far right lane turned into a right turn only lane, to help with traffic flow." The response was "a traffic count and a field observation were conducted. There is a "Capital Improvement Budget", project no 06PW0030 to construct a right-turn lane at this location but it is not funded at the present time. Such project should improve the approach capacity at this intersection, however, changing the existing lane and making right lane for right only is not feasible due to the alignment at this intersection. There is not enough room to shift traffic thru the intersection without removing the southbound left-turn lane."

On November 27, 2006 Council Member Gotto requested "right turn lane on Andrew Jackson Pkwy onto Chandler Road." The response was identical to the previous response.

On November 28, 2007, a request was received from Council Member Gotto. It states "Right turn lane at Andrew Jackson Pkwy and Old Lebanon Dirt Rd for traffic turning onto Old Lebanon Dirt Rd to go eastbound. This improvement would allow two lanes on Andrew Jackson Pkwy to remain open for NB traffic. Traffic in the right hand lane of Andrew Jackson Pkwy waiting to turn onto Old Lebanon Dirt Rd to go east currently backs up onto Old Hickory Blvd during afternoon rush hour. This improvement will relieve some of the congestion at these two intersections." The response was similar to that for the previous two requests.

At about the same time, the Capital Projects staff was asked to prepare a quick sketch plan and cost estimate for the turn lane. In response, a sketch was prepared showing a right turn lane running for the entire block face from the Chandler intersection back to Andrew Jackson Way. No traffic data or other supporting information was obtained at that time. This will be discussed later in the report as one of the project alternatives.

## **Studies**

### Crash study

Crash data for the first ten months of 2007 and all of 2006 was analyzed. Detailed data for 2005 was not available.



No unusual patterns were noted in the data.

The annual crash frequency is 10. The annual crash rate is 1.06 crashes per million entering vehicles. The statewide rate for similar intersections is 0.83. Although the crash rate at this intersection is higher than the state wide rate it is not statistically significantly higher at either the 95% or 99% confidence level.

### Capacity

As discussed previously, these two intersections are being analyzed as a single intersection. Because of this Synchro 6 Build 614 was utilized to determine the intersection LOS.

The existing LOS in both the AM and the PM is F. This means that demand is exceeding capacity during these peak hours. This translates to long traffic backups and waiting times of more than one signal cycle.

## **Planning Review**

### Sidewalk and Bikeway Plan information

The Sidewalk Program website shows one project in the vicinity of this intersection. It is a gap closure on the east side of Chandler Road in front of Dodson Chapel School. This project was completed in 2007. No other new sidewalks are planned in the area of the study inetersection.

The Bicycle Plan shows vision bikeways on Andrew Jackson Pkwy. and on Chandler Road. No bicycle facilities currently exist on either of these roadways.

### Community and Neighborhood Plan information

The Donelson-Hermitage-Old Hickory Community Plan was last updated in 2004. It was adopted by the Planning Commission on October 14, 2004. The plan is divided into three communities. The subject intersection is located in the South Hermitage community. Portions of this plan are included in the exhibits. Some of these graphics have been extracted from larger maps in the plan document to focus on the area in the vicinity of the proposed project.

The existing land use at the time of the Plan in the vicinity of the intersection was residential with the exception of the southeast corner which was commercial. Since that time the southwest corner has been rezoned and developed as a storage facility. In addition, the area north of Chandler Road between Andrew Jackson Pkwy and the Nashville & Eastern Railroad has been developed as a commuter train station for the Music City Star.

The only Natural Features noted in the vicinity of the subject intersection are the floodplain and floodway for Stoners Creek which is northwest of the intersection. No Historic Resources or goals were identified in the vicinity of the subject intersection.

The Structure Plan calls for consideration of extending Old Lebanon Dirt Road to Old Hickory Blvd. It also calls for the development of the commuter rail station which has since been completed. It also designates the land use policy for the area west of Andrew Jackson Pkwy and west of Chandler Road as community center. The residential area east of Chandler Road and also the area south of Old Lebanon Dirt Road were designated as Neighborhood General.

The entire area is designated for a "Detailed Neighborhood Design Plan." This plan has been completed and will be discussed later in this section.

The Structure Plan shows two potential changes for the roadway network that may affect this intersection. The first is the extension of Old Lebanon Dirt Road to Old Hickory Blvd. The second is the change in designation of Andrew Jackson Way to a "Major".

The extension of Old Lebanon Dirt Road occurs through a flood plan and over Stoner's Creek. This project will require careful design to address the impacts of building in the flood plan. Since the project is not currently in the CIB, it is expected that it will not be constructed in the next ten years.

A change in designation of Andrew Jackson Way is not expected to have significant immediate impact on traffic if it was implemented. This roadway is already used as a by-pass to Andrew Jackson Pkwy. during the peak periods. It is a relatively short stretch of roadway with limited undeveloped land. The east side of the roadway is fully developed and only a portion of the area between Andrew Jackson Pkwy and Andrew Jackson Way is undeveloped. Unless the roadway is widened or realigned neither of which are currently identified in the CIB as projects, no significant impact is expected.

The Pedestrian and Bicycle network Plans shows the bicycle facilities identified in the Bicycle Plan previously discussed. It also shows a proposed trailhead in the vicinity of the commuter rail station. This project is identified in the Transportation Projects exhibit.

The Hermitage Detailed Neighborhood Design Plan has been completed. It makes no modifications to the above recommendations relative to this intersection.

Anticipated developments

Review of the Planning Commission website for Planning and permit activities revealed no activity in this area.

**Analysis**

Currently this complex is operating at a substandard level of service in both the AM and PM rush hours as shown in the table below.

Existing	AM	PM
Andrew Jackson Parkway & Old Lebanon Dirt Road	D	F
Chandler Road & Old Lebanon Dirt Road	F	C

The proposal is to add a right turn lane to northbound Andrew Jackson Pkwy at Old Lebanon Dirt Road. This would improve the LOS at this intersection as shown in the table below.

Proposed Improvement	AM	PM
----------------------	----	----

Andrew Jackson parkway & Old Lebanon Dirt Road	D	C
Chandler Road & Old Lebanon Dirt Road	F	C

Since this improvement only addresses a major movement in the PM, it has no impact on the LOS in the AM. In the morning the complex would remain at LOS F even with the improvements. The principal factor affecting the AM LOS is the capacity deficiency on a minor approach, westbound Old Lebanon Dirt Road. In order to address this deficiency, additional improvements are needed.

The alternative that showed the greatest improvement was the proposed right turn lane plus the following:

- Two left turn lanes from Old Lebanon Dirt Road to Andrew Jackson Parkway. These lanes would begin east of Chandler Road.
- Two right turn lanes from Chandler Road to Old Lebanon Dirt Road.

These lanes would improve the LOS to those shown in the table below.

Additional Improvements	AM	PM
Andrew Jackson Parkway & Old Lebanon Dirt Road	C	C
Chandler Road & Old Lebanon Dirt Road	C	C

With these changes, the complex is expected to operate at an excellent LOS after construction.

The LOS calculations are included in the exhibits.

## Proposed Project

### Description and scope

The proposed project includes a right turn lane on northbound Andrew Jackson Pkwy., as originally specified in the CIB, plus two left turn lanes from Old Lebanon Dirt Road to Andrew Jackson Pkwy. and two right turn lanes from Chandler Road to Old Lebanon Dirt Road.

This intersection currently operates with extensive delays in both the morning and evening rush hours. The proposed project will address the delays that occur in both rush hours.

This project has four elements:

1. The addition of a 300' long right turn lane for northbound. Additional right-of-way will be required and sufficient right-of-way for the future addition of a sidewalk should be obtained.
2. Adding a second 250' lane for westbound Old Lebanon Dirt Road at Chandler Road.
3. Restriping Old Lebanon Dirt Road at Andrew Jackson Pkwy to allow left turns from both existing lanes.

4. Restriping Chandler Road to provide left turns from both existing lanes.

This work will also require drainage improvements along Old Lebanon Dirt Road and reconstruction of the traffic signal.

It would also require revision to the signal timing. The installation of interconnect cable between this intersection and the traffic signal at Andrew Jackson Pkwy and Old Hickory Blvd and revisions to the coordination plans are included in the proposed project.

Impacts

The Signalized Intersections: Informational Guide published by the Federal Highway Administration was utilized to determine the impacts on crashes of the proposed project.

Installation of dual left turn lanes on Old Lebanon Dirt Road would result in an estimated 29% reduction in injury and fatal collisions and 26% reduction in PDO collisions. This equates to an average annual reduction of 2.1 injury crashes and 0.5 PDO crashes. FHWA has determined that the cost of each injury crash is \$150,000 and of each PDO crash is \$4,000. The estimated annual savings for projected reduction in crash frequency due to the construction of dual left turn lanes is \$317,000. The typical life span of this type of improvement is 25 years. The total savings is \$7,925,000.

No crash reduction has been associated with the provision of a second right turn lane as proposed on Chandler Road.

The addition of a right turn lane on Andrew Jackson Parkway will result in an estimated 40% reduction in injury and fatal collisions and 10% reduction in PDO collisions. This equates to an average annual reduction of 2.8 injury crashes and 0.2 PDO crashes. Using the same FHWA accident cost figures and assumed project life, the estimated annual savings is \$420,800. The savings over the life of the project is estimated as \$10,520,000.

The project will result in a reduction in delay at this intersection. Based solely on the three peak hours, the value of this savings is estimated as \$693,000 annually or \$17,325,000 over the life span of the proposed improvements.

The project will result in a reduction in fuel consumption at this intersection. Based solely on the three peak hours, the value of this savings is estimated as \$91,500 annually or \$2,287,500 over the life span of the proposed improvements.

The estimate for both delay and fuel consumption savings is very conservative, since additional savings will accrue during the other hours of the day.

There will also be improvements in air quality as a result of this project. The value of these improvements was not calculated.

This project is estimated to produce \$1,522,300 in savings annually. The total savings over the life of the improvements is \$38,057,500.

### Cost Estimate

The estimated cost of the recommend improvements for this intersection to correct intersection capacity constraints in both the morning and evening peak periods is \$1,000,000.

### Benefit vs. Cost

It can be seen that the investment of \$1,000,000 would be repaid in benefits to motorists in less than a year.

For a more precise measure of the project's value, a benefit to cost ratio can be calculated. One way to do this is to estimate the equivalent annual cost, as if the money were borrowed and then paid back over the life of the project. This value can then be compared to the annual benefits.

The life span of this type of improvement is 25 years. If \$1,000,000 were borrowed and repaid over 25 years at a 5% interest rate, this would require about \$71,000 in annual payments. The 5% rate is within the range paid by Metro on General Obligation bonds over the last several years.

Dividing the estimated annual benefits of \$1,522,300 by the annualized project cost of \$71,000 yields a benefit to cost ratio of 21.4 to 1. In other words, the motoring public would receive \$21.40 in benefits for every dollar invested in the project.

### Alternatives

There are several alternatives. The first is to do nothing. This alternative is not recommended due to the delays that occur daily at this intersection.

The second alternative is the right turn improvement identified in the original project. This is not recommended because delays would continue to be experienced in the morning peak period. If the modification required to correct the delays in the morning rush period were implemented at a later date, there would be additional costs and inconvenience that would occur during the second construction period.

A third alternative is to extend the right turn lane to Andrew Jackson Way which was developed in the November 2007 sketch plan. This alternative is not recommended because of the additional costs. However, it does have the benefit of improving the sight distance at the intersection of Andrew Jackson Pkwy and Andrew Jackson Way. It would be prudent to reevaluate the costs and benedites of this alternative during the design phase.

A fourth alternative is the relocation of Chandler Road so that it does not intersect with Old Lebanon Dirt Road but instead connects to Andrew Jackson Pkwy east of the Music City Star station. This alternative is not recommended due to the opposition of the Nashville and Eastern Railroad to a new at grade crossing.

### **Conclusion**

The right turn lane on northbound Andrew Jackson should be constructed as originally proposed. In addition, lanes should be constructed on Old Lebanon Dirt Road to address the

capacity restraints during the morning peak period. Right-of-way acquisition along Andrew Jackson Pkwy. should be adequate to accommodate a future sidewalk. Minimally, the description and cost for this Capital Improvement Project should be revised to include this expanded scope.

In addition, consideration should be given to combining CIB project 97PW074 with this project since it is unlikely that a new at grade crossing will be permitted by the Nashville & Eastern Railroad which is required for 97PW074 to proceed. Further, it is possible that TIP project #020, which is funded, could be revised to include this project. A study of Andrew Jackson Pkwy. and Old Hickory Blvd. should be conducted to determine if additional improvements at that location should be combined with the recommended project for inclusion in the TIP project revision.



# Functional layout





## Cost estimate

<b>Project Name:</b>	Andrew Jackson, Chandler & Old Lebanon Dirt		<b>Project No.:</b>	06PW0030	
<b>Project Description:</b>	Total Intersection Improvements				
<b>Last Updated:</b>	1/28/2008	RWW			
				<b>Budget Subtotals</b>	
				<b>Operational</b>	<b>Capital</b>
<b>Right-of-Way</b>					
Land, Improvements, Damages			\$40,000.00		
10' Temporary Construction Easement on both sides			\$16,000.00		
<i>Total Right-of-Way Cost</i>				\$0	\$56,000
<b>Utility &amp; Traffic Signal Relocation</b>					
Non-Reimbursable			\$0.00		
<i>Total Utility Relocation Cost</i>				\$0	\$0
<b>Construction</b>					
Staking of Lines and Grades		\$25,000			
Clearing and Grubbing/Demolition		\$25,000			
Grading/Excavation		\$20,700			
Erosion Control		\$2,400			
Paving		\$180,200			
Drainage		\$92,000			
Concrete		\$18,000			
Traffic Control		\$17,300			
Permanent Traffic Control		\$7,700			
Landscaping		\$3,400			
Traffic Signal		\$173,600			
<i>Total Construction Cost</i>				\$0	\$566,000
<b>Construction Management</b>					
Construction Survey @ 2% of Total Construction Cost				\$0	\$12,000
Construction Management @ 3% of Total Construction Cost				\$0	\$17,000
Construction Inspection @ 5% of Total Construction Cost				\$0	\$29,000
Project Closeout @ 0.4% of Total Construction Cost				\$0	\$3,000
<b>Engineering</b>					
Planning / Scoping @ 0.5% of Total Construction Cost				\$0	\$3,000
Surveying @ 1.5% of Total Construction Cost				\$0	\$9,000
Design @ 13% of Total Construction Cost				\$0	\$74,000
Design Administration @ 2% of Total Construction Cost				\$0	\$12,000
Signal Design & Coordination				\$0	\$24,000
<b>Contingency (20%)</b>				\$0	\$161,000
<b>TOTALS</b>				<b>\$0</b>	<b>\$966,000</b>

## EXHIBITS

- Vicinity map
- Aerial views
- Other photographs
- Existing features
- Traffic volumes
- Previous requests
- Crash data
- Capacity worksheets
- Harmelink worksheet
- Sidewalk Plan excerpts
- Bicycle Plan excerpts
- Community Plan excerpts
- Detailed cost estimate







Exhibit 2. Aerial view



Andrew Jackson Parkway & Old Lebanon Dirt Road  
Page 16

Exhibit 3. Other Photographs

Southbound Chandler Road at Old Lebanon Dirt Road





Eastbound Old Lebanon Dirt Road at the Nashville & Eastern tracks



Eastbound Old Lebanon Dirt Road at Andrew Jackson Parkway



Eastbound Old Lebanon Dirt Road at Chandler Road



Westbound Old Lebanon Dirt Road at Andrew Jackson Parkway





Northbound Andrew Jackson Parkway at Old Lebanon Dirt Road



Southbound Andrew Jackson Parkway at Old Lebanon Dirt Road



Southbound Andrew Jackson Parkway at the Nashville & Eastern tracks





Exhibit 5. Traffic Volumes

State Count Old Lebanon Dirt Road History

Station #	County	Location	Route #	Route Name	Station Out
000455	Davidson	OLD LEBANON RD-NEAR WILSON CO LINE	04450	4450	N

Record	Year	AADT	Remarks
1	2007	3925	
2	2006	4143	
3	2005	4013	
4	2004	3813	EST
5	2003	3662	
6	2002	3827	
7	2001	3649	
8	2000	3515	
9	1999	3739	
10	1998	3319	
11	1997	2837	
12	1996	2464	
13	1995	2177	
14	1994	2100	ACTUAL = 1263
15	1993	2117	
16	1992	2019	
17	1991	1513	
18	1990	3200	ACTUAL = 1416
19	1989	3289	
20	1988	1993	
21	1987	1640	1ST YR COUNT

State Count Old Hickory Blvd. History

Station #	County	Location	Route #	Route Name	Station Out
000050	Davidson	O.H. BLVD. - E OF HERMITAGE	SR045	SR-45	N

Record	Year	AADT	Remarks
1	2007	45625	
2	2006	44842	
3	2005	46739	
4	2004	48284	EST
5	2003	43557	
6	2002	45313	
7	2001	44940	
8	2000	42687	
9	1999	44115	
10	1998	43532	
11	1997	60124	
12	1996	63132	
13	1995	52782	
14	1994	39639	
15	1993	46744	NEW RD LINE
16	1992	40810	ACTUAL = 18500
17	1991	12215	
18	1990	27918	
19	1989	25522	
20	1988	29271	HIGH
21	1987	24216	
22	1986	22753	
23	1985	20751	

# Metro Count Old Lebanon Dirt Road Eastbound

METRO NASHVILLE  
PUBLIC WORKS  
Old Lebanon Dirt Rd 300'  
Wof Tulip Grove Rd

Site Code: 02072006  
Station ID: 03  
Old Lebanon Dirt Rd 500'  
W of Tulip Grove Rd  
Latitude: 0' 0.000 Undefined

Start Time	0	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	65	66	70	71	75	76	9999	Total	Pace Speed in Pace	Number in Pace	
02/07/06	0	15	0	0	0	0	0	0	1	4	4	4	4	4	1	1	0	0	0	1	0	0	0	0	0	0	0	0	7	37-46	6
01:00	0	0	0	0	0	0	0	0	2	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	33-42	10	
02:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	36-45	7	
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	37-46	2		
04:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	5	38-47	2		
05:00	0	0	0	0	0	0	0	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	35-44	7		
06:00	2	0	0	0	0	0	0	0	2	8	13	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	30	36-45	21		
07:00	2	1	1	1	1	1	4	16	39	12	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	80	36-45	55		
08:00	0	0	0	0	0	0	0	0	3	14	31	15	0	0	0	0	0	0	0	2	0	0	0	0	0	0	65	37-46	46		
09:00	0	0	0	0	0	0	0	0	3	9	20	12	20	0	8	0	0	0	0	1	0	0	0	0	0	0	44	36-45	32		
10:00	0	0	1	1	1	1	1	1	5	19	35	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	79	36-45	54		
11:00	0	0	0	0	1	1	4	3	20	38	23	3	3	0	0	0	0	0	0	1	0	0	0	0	0	93	39-48	61			
12 PM	0	0	0	0	2	0	0	0	7	17	43	17	7	0	0	0	0	0	0	1	0	0	0	0	0	0	95	38-47	62		
13:00	0	0	2	1	0	0	0	0	5	38	48	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	108	36-45	86		
14:00	1	1	1	0	0	0	0	0	2	7	14	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	36-45	21		
15:00	0	0	0	0	0	0	0	0	4	15	32	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	137	36-45	98		
16:00	0	0	0	0	1	1	1	1	9	38	118	53	9	0	0	0	0	0	0	0	0	0	0	0	0	0	229	41-50	171		
17:00	0	0	0	0	0	0	0	0	23	68	99	23	6	0	0	0	0	0	0	1	0	0	0	0	0	0	221	36-45	167		
18:00	2	0	0	0	0	0	1	12	73	98	28	5	1	0	0	0	0	0	0	0	0	0	0	0	2	0	222	36-45	171		
19:00	1	0	0	0	0	0	0	0	8	50	55	16	4	0	0	0	0	0	0	0	0	0	0	0	0	0	136	36-45	105		
20:00	1	0	0	0	0	0	0	0	12	40	43	19	3	0	0	0	0	0	0	0	0	0	0	0	0	0	121	36-45	83		
21:00	0	0	0	0	0	0	0	0	8	21	31	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	74	36-45	52		
22:00	0	0	0	0	0	0	0	0	6	15	16	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	46	36-45	31		
23:00	0	0	0	0	0	0	0	0	7	11	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	37-46	19		
Total	9	15	6	6	10	11	120	511	831	306	54	13	2	0	0	0	0	0	0	13	2	3	2	2	2	0	1878				
Percent	0.5%	0.3%	0.3%	0.5%	0.6%	0.6%	6.4%	27.2%	44.2%	16.3%	2.9%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.1%	0.2%	0.1%	0.1%	0.0%	0.0%					
AM Peak Vol.	06:00	07:00	04:00	11:00	11:00	11:00	10:00	11:00	07:00	11:00	07:00	08:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	08:00	07:00	07:00	07:00	07:00	07:00	07:00	11:00				
PM Peak Vol.	18:00	13:00	11:00	12:00	14:00	12:00	17:00	18:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	12:00	20:00	12:00	18:00	18:00	18:00	18:00	16:00				
Total	9	6	2	2	10	11	120	511	831	306	54	13	2	0	0	0	0	0	0	13	2	3	2	2	2	0	1878				
Percent	0.5%	0.3%	0.3%	0.5%	0.6%	0.6%	6.4%	27.2%	44.2%	16.3%	2.9%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.1%	0.2%	0.1%	0.1%	0.0%	0.0%					

Stats	10 MPH Pace Speed	36-45 MPH
Number in Pace	1342	
Percent in Pace	71.5%	
Number of Vehicles > 40 MPH	1211	
Percent of Vehicles > 40 MPH	64.5%	
Mean Speed(Average)	42 MPH	







Metro Count Old Lebanon Dirt Road Total

METRO NASHVILLE  
PUBLIC WORKS  
Old Lebanon Dirt Rd 300'  
Wof Tulip Grove Rd

Site Code: 02072006  
Station ID: 03  
Old Lebanon Dirt Rd 500'  
W of Tulip Grove Rd

Latitude: 0' 0.000 Undefined

EB_WB	Start Time	0	16	21	26	31	36	41	46	51	56	61	66	71	76	Pace	
	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	80	Speed	
02/07/06	02:00	0	0	0	1	0	6	6	1	0	1	0	0	0	0	15	36-45
	02:00	0	0	0	0	2	7	2	1	0	0	0	0	0	0	12	33-42
	02:00	0	0	0	0	2	1	8	0	1	0	0	0	0	0	12	36-45
	03:00	0	0	0	0	0	2	2	1	0	0	0	0	0	0	5	37-46
	04:00	0	0	2	1	0	3	4	6	1	3	0	0	0	0	20	38-47
	05:00	0	0	0	0	2	11	8	4	1	0	0	0	0	0	26	34-43
	06:00	2	1	0	0	6	55	68	22	8	1	0	0	0	0	163	36-45
	07:00	4	1	1	1	12	57	141	76	11	1	1	1	1	0	307	41-50
	08:00	1	0	0	0	11	46	80	44	9	2	1	0	0	0	194	36-45
	09:00	1	1	0	1	4	38	66	28	4	2	0	0	0	0	145	36-45
	10:00	0	1	3	2	9	39	80	37	5	1	0	0	0	0	177	37-46
	11:00	0	1	1	7	9	42	73	33	8	1	0	0	0	0	175	36-45
	12:00	0	1	2	0	14	38	85	31	10	1	0	1	0	0	183	36-45
	13:00	0	2	1	0	8	63	82	32	4	2	0	1	0	0	195	36-45
	14:00	2	1	0	2	4	14	23	5	0	0	0	0	0	0	51	36-45
	15:00	0	0	0	0	10	69	108	52	11	1	0	0	0	0	251	36-45
	16:00	0	0	1	3	15	74	164	70	14	0	0	0	0	0	341	36-45
	17:00	0	2	0	1	35	105	165	44	10	1	0	1	0	0	364	36-45
	18:00	2	2	1	1	19	117	146	47	12	1	0	0	0	0	350	36-45
	19:00	1	0	2	1	14	66	77	25	4	1	0	0	0	0	191	36-45
	20:00	2	0	1	1	14	53	60	25	3	0	1	0	0	0	160	36-45
	21:00	2	0	0	1	11	35	43	17	6	3	0	0	0	0	118	36-45
	22:00	0	0	1	0	6	19	24	9	3	0	0	1	0	0	63	36-45
	23:00	0	0	0	0	2	8	14	7	3	0	0	0	0	0	34	38-47
Total	Percent	17	13	16	23	209	968	1529	617	128	21	3	5	3	0	3552	
AM Peak	Percent	0.5%	0.4%	0.5%	0.6%	5.9%	27.3%	43.0%	17.4%	3.6%	0.6%	0.1%	0.1%	0.1%	0.0%		
PM Peak	Vol.	4	1	3	7	12	57	141	76	11	3	1	1	1	1	307	
PM Peak	Vol.	14:00	13:00	12:00	16:00	17:00	18:00	17:00	16:00	16:00	21:00	20:00	12:00	18:00	17:00		
Total	Percent	17	13	16	23	209	968	1529	617	128	21	3	5	3	0	3552	
15th Percentile																	
50th Percentile																	
85th Percentile																	
95th Percentile																	

Stats  
10 MPH Pace Speed : 36-45 MPH  
Number in Pace : 2497  
Percent in Pace : 70.3%  
Number of Vehicles > 40 MPH : 2306  
Percent of Vehicles > 40 MPH : 64.9%  
Mean Speed(Average) : 42 MPH

# Metro Count Chandler Road Southbound

Metro Public Works  
730 S. 5th St  
Nashville, TN

Site Code: 011708  
Station ID: 07  
Chandler Rd & N of Old Leb Dirt Rd

SB	Start Time	0	16	21	26	31	36	41	46	51	56	61	66	71	76	81th	85th	95th	Percent		
01/17/08	01:00	0	0	0	0	1	6	2	2	0	0	0	0	0	0	0	11	45	46		
	02:00	0	0	0	0	1	6	0	2	0	0	0	0	0	0	0	9	46	47		
	03:00	0	0	0	0	1	3	3	0	0	0	0	0	0	0	7	42	43			
	04:00	0	1	0	0	1	4	6	1	1	0	0	0	0	0	14	45	50			
	05:00	0	0	0	0	5	22	8	3	0	0	0	0	0	0	38	43	46			
	06:00	31	22	35	65	147	138	29	2	0	0	0	0	0	1	136	43	45			
	07:00	113	81	64	65	62	19	1	3	0	0	0	0	0	2	471	39	42			
	08:00	32	15	28	32	109	110	46	3	2	0	0	0	0	5	413	33	37			
	09:00	5	3	5	11	44	105	56	8	3	0	1	0	0	4	382	40	44			
	10:00	2	0	0	8	32	66	54	7	0	0	0	0	0	2	246	44	48			
	11:00	0	1	2	3	23	68	37	10	0	1	0	0	0	2	171	44	45			
	12 PM	1	1	3	14	34	70	27	1	0	0	0	0	0	2	145	44	47			
	13:00	1	0	1	11	26	81	34	8	0	0	0	0	0	1	163	43	46			
	14:00	1	0	2	17	54	76	23	3	2	1	0	0	0	1	180	41	45			
	15:00	6	5	23	65	80	33	17	2	0	0	0	1	0	4	236	39	44			
	16:00	2	1	4	4	42	78	29	3	1	0	0	0	1	6	167	43	48			
	17:00	1	0	2	19	59	72	25	2	0	1	2	0	0	4	187	42	45			
	18:00	2	1	1	14	47	73	19	1	0	0	0	1	0	2	161	40	44			
	19:00	2	0	2	6	23	44	14	2	0	0	0	0	0	3	96	42	45			
	20:00	1	1	2	3	13	22	12	2	0	0	0	0	0	0	56	42	45			
	21:00	0	0	0	2	18	22	5	1	1	0	0	0	0	0	49	40	45			
	22:00	0	0	2	0	12	15	3	1	1	0	0	0	0	0	34	40	43			
	23:00	0	0	0	1	6	12	4	2	0	0	0	0	0	0	25	42	46			
	Total	200	132	174	343	856	1225	486	71	11	3	3	2	2	42	3550					
	Percent	5.6%	3.7%	4.9%	9.7%	24.1%	34.5%	13.7%	2.0%	0.3%	0.1%	0.1%	0.1%	0.1%	1.2%						
	AM Peak	07:00	07:00	07:00	06:00	06:00	06:00	09:00	11:00	09:00	11:00	09:00	09:00	09:00	07:00	06:00					
	Vol.	113	81	64	65	147	138	56	10	3	1	1	1	1	5	471					
	PM Peak	15:00	15:00	15:00	15:00	15:00	13:00	13:00	13:00	14:00	14:00	17:00	15:00	16:00	16:00	15:00					
	Vol.	6	5	23	65	80	81	34	8	2	1	2	1	1	6	236					
	Total	200	132	174	343	856	1225	486	71	11	3	3	2	2	42	3550					
	Percent	5.6%	3.7%	4.9%	9.7%	24.1%	34.5%	13.7%	2.0%	0.3%	0.1%	0.1%	0.1%	0.1%	1.2%						

Stats  
 10 MPH Pace Speed : 31-40 MPH  
 Number in Pace : 2081  
 Percent in Pace : 58.6%  
 Number of Vehicles > 40 MPH : 620  
 Percent of Vehicles > 40 MPH : 17.5%  
 Mean Speed(Average) : 35 MPH

Metro Count Chandler Road Northbound

Metro Public Works  
730 S. 5th St  
Nashville, TN

Site Code: 011708  
Station ID: 07  
Chandler Rd & N of Old Leb Dirt Rd

NB Start Time	Latitude: 0° 0' 0.000 Undefined																	
	15	16	21	25	26	30	31	36	41	46	51	56	61	66	71	76	85th	95th
	Vol.	Vol.	Vol.	Vol.	Vol.	Vol.	Vol.	Vol.	Vol.	Vol.	Vol.	Vol.	Vol.	Vol.	Vol.	Vol.	Percent	Percent
01/17/08	0	0	0	0	5	18	13	3	3	0	0	0	0	0	0	0	39	39
01:00	0	0	0	0	2	9	8	3	1	0	0	0	0	0	0	0	23	41
02:00	0	0	0	0	3	5	3	0	0	0	0	0	0	0	0	0	11	36
03:00	0	0	0	0	2	4	4	2	0	0	0	0	0	0	0	0	12	39
04:00	0	0	1	3	4	4	6	0	0	0	0	0	0	0	0	0	14	38
05:00	0	0	0	1	9	6	8	1	0	0	0	0	0	0	0	0	24	38
06:00	7	1	0	10	17	17	17	2	1	0	0	0	1	0	0	2	58	39
07:00	27	17	33	51	17	5	3	3	0	0	1	0	1	1	3	233	35	43
08:00	5	0	13	24	54	18	3	0	0	0	0	0	0	0	2	119	37	40
09:00	0	0	4	10	56	28	6	0	0	1	0	1	0	0	0	107	39	43
10:00	1	0	5	16	56	31	4	0	0	1	0	0	0	0	0	115	39	40
11:00	0	1	4	21	55	43	9	1	0	0	0	0	0	0	1	135	39	42
12 PM	2	0	1	21	80	54	5	0	0	0	0	1	0	0	4	168	39	42
13:00	1	0	4	29	77	45	6	1	0	0	0	0	0	0	1	164	39	40
14:00	1	0	10	62	109	51	4	1	0	0	0	0	0	0	2	240	38	40
15:00	9	4	22	84	122	59	3	0	2	1	0	2	1	0	2	308	37	40
16:00	1	0	11	54	227	125	11	1	1	0	0	0	1	0	5	437	39	40
17:00	3	1	7	63	232	117	11	1	1	0	0	0	0	1	4	440	38	40
18:00	4	0	1	52	172	95	9	1	0	0	0	0	0	0	2	336	38	40
19:00	1	0	10	37	114	64	7	2	0	0	1	0	0	1	2	239	39	41
20:00	2	1	6	23	82	65	10	1	0	0	0	1	0	0	0	190	39	41
21:00	1	0	3	21	97	59	4	0	0	0	0	0	0	0	0	186	38	40
22:00	0	0	1	15	70	43	7	0	0	0	0	0	0	0	0	136	39	40
23:00	0	0	3	5	31	15	2	0	0	0	0	0	0	0	0	56	38	40
Total	65	25	139	644	1748	988	117	14	3	5	4	3	3	3	2	33	3790	
Percent	1.7%	0.7%	3.7%	17.0%	46.1%	26.1%	3.1%	0.4%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.9%		
AM Peak Vol.	07:00	07:00	07:00	07:00	09:00	09:00	11:00	07:00	07:00	07:00	06:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00
PM Peak Vol.	15:00	15:00	15:00	15:00	17:00	17:00	16:00	19:00	15:00	15:00	15:00	17:00	16:00	16:00	16:00	17:00	17:00	17:00
Total	9	4	22	84	232	125	11	2	2	2	1	1	1	1	1	5	440	
Percent	1.7%	0.7%	3.7%	17.0%	46.1%	26.1%	3.1%	0.4%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.9%		

15th Percentile : 28 MPH  
50th Percentile : 33 MPH  
85th Percentile : 39 MPH  
95th Percentile : 40 MPH

Stats  
10 MPH Pace Speed : 31-40 MPH  
Number in Pace : 2736  
Percent in Pace : 72.2%  
Number of Vehicles > 40 MPH : 181  
Percent of Vehicles > 40 MPH : 4.8%  
Mean Speed(Average) : 34 MPH

Metro Count Chandler Road Total

Metro Public Works  
730 S. 5th St  
Nashville, TN

Site Code: 011708  
Station ID: 07  
Chandler Rd & N of Old Leb Dirt Rd

SB_NB	Start Time	16	21	26	31	36	41	46	51	56	61	66	71	76	81	86	91	96	Total	Percent	Latitude: 0° 0' 0.000	Undefined
0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	44		
0	01:00	0	0	2	10	14	3	3	0	0	0	0	0	0	0	0	0	0	32	43		
0	02:00	0	0	0	6	6	3	0	0	0	0	0	0	0	0	0	0	0	18	40		
0	03:00	0	1	2	5	8	8	1	1	0	0	0	0	0	0	0	0	0	26	43		
0	04:00	0	1	3	9	28	8	3	0	0	0	0	0	0	0	0	0	0	52	42		
0	05:00	0	2	12	22	88	33	2	0	0	0	0	0	0	0	0	0	1	160	42		
38	06:00	23	35	75	164	155	31	3	0	0	1	0	0	0	0	0	0	4	529	39		
140	07:00	98	97	138	36	6	6	6	1	0	1	1	1	8	646	34	39					
08:00	37	15	41	56	163	128	49	3	2	0	0	0	0	7	501	40	44					
09:00	5	3	9	21	100	133	62	8	4	1	1	0	0	5	353	43	46					
10:00	3	0	5	24	88	97	58	7	1	0	0	0	0	3	286	43	45					
11:00	0	2	6	24	78	111	46	11	0	1	0	0	0	1	280	42	45					
12:00	3	1	4	35	114	124	32	1	0	1	0	0	0	6	321	40	44					
13:00	2	0	5	40	103	126	40	9	0	0	0	0	0	2	327	41	45					
14:00	2	0	12	79	163	127	27	4	2	1	0	0	0	3	420	39	43					
15:00	15	9	45	149	202	92	20	2	0	2	1	1	0	6	544	38	42					
16:00	3	1	11	58	269	203	40	4	1	0	1	0	2	11	604	40	44					
17:00	4	1	9	82	291	189	36	3	0	1	2	1	0	8	627	39	43					
18:00	6	1	2	66	219	168	28	2	0	0	0	1	0	4	497	39	42					
19:00	3	0	12	43	137	108	21	4	0	1	0	1	0	5	335	40	44					
20:00	3	2	8	26	95	87	22	3	0	0	0	0	0	0	246	40	43					
21:00	1	0	3	23	115	81	9	1	1	0	0	0	0	1	235	39	40					
22:00	0	0	3	15	82	58	10	1	1	0	0	0	0	0	170	39	40					
23:00	0	0	3	6	37	27	6	2	0	0	0	0	0	0	81	40	43					
Total	265	157	313	987	2604	2213	603	85	14	8	7	5	4	75	7340							
Percent	3.6%	2.1%	4.3%	13.4%	35.5%	30.1%	8.2%	1.2%	0.2%	0.1%	0.1%	0.1%	0.1%	1.0%								
AM Peak	07:00	07:00	07:00	07:00	06:00	06:00	09:00	11:00	09:00	09:00	06:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00
Vol.	140	98	97	138	164	155	62	11	4	1	1	1	1	8	646							
PM Peak	15:00	15:00	15:00	15:00	17:00	16:00	13:00	13:00	14:00	15:00	17:00	15:00	16:00	16:00	17:00							
Vol.	15	9	45	149	291	203	40	9	2	2	2	1	2	11	627							
Total	265	157	313	987	2604	2213	603	85	14	8	7	5	4	75	7340							
Percent	3.6%	2.1%	4.3%	13.4%	35.5%	30.1%	8.2%	1.2%	0.2%	0.1%	0.1%	0.1%	0.1%	1.0%								

Stats  
 10 MPH Pace Speed : 31-40 MPH  
 Number in Pace : 4817  
 Percent in Pace : 65.6%  
 Number of Vehicles > 40 MPH : 801  
 Percent of Vehicles > 40 MPH : 10.9%  
 Mean Speed(Average) : 34 MPH

# Metro Count Andrew Jackson Parkway Northbound

Metro Public Works  
730 S. 5th St  
Nashville, TN

Site Code: 011708  
Station ID: 03  
Andrew Jack Pky NB & S of Old Leb Dirt

Latitude: 0' 0.000 Undefined

Start Time	Mon 14-Jan-08	Tue 15-Jan-08	Wed 16-Jan-08	Thu 17-Jan-08	Fri 18-Jan-08	Sat 19-Jan-08	Sun 20-Jan-08	Average Day	Week Average
12:00 AM	152							152	152
01:00	78							78	78
02:00	46							46	46
03:00	51							51	51
04:00	46							46	46
05:00	113							113	113
06:00	250							250	250
07:00	493							493	493
08:00	471							471	471
09:00	540							540	540
10:00	569							569	569
11:00	669							669	669
12:00 PM	743			729				736	736
01:00				759				759	759
02:00				888				888	888
03:00				1209				1209	1209
04:00				1487				1487	1487
05:00				1416				1416	1416
06:00				1197				1197	1197
07:00				856				856	856
08:00				679				679	679
09:00				624				624	624
10:00				465				465	465
11:00				214				214	214
Day Total	4221	0	0	10523	0	0	0	14008	14008
% Avg. WKDay	30.1%	0.0%	0.0%	75.1%	0.0%	0.0%	0.0%	100.0%	100.0%
% Avg. Week	30.1%	0.0%	0.0%	75.1%	0.0%	0.0%	0.0%	100.0%	100.0%
AM Peak Vol.	11:00	669						669	669
PM Peak Vol.	12:00	743		1600				1600	1600
Grand Total	4221	0	0	10523	0	0	0	14008	14008
ADT	Not Calculated								

# Metro Count Andrew Jackson Parkway Southbound

Metro Public Works  
730 S. 5th St  
Nashville, TN

Page 1  
Site Code: 011708  
Station ID: 06  
Andrew Jack Pky SB & N of Old Leb Dirt

Start Time	Mon 14-Jan-08	Tue 15-Jan-08	Wed 16-Jan-08	Thu 17-Jan-08	Fri 18-Jan-08	Average Day	Sat 19-Jan-08	Sun 20-Jan-08	Week Average
12:00 AM	53					53			53
01:00	34					34			34
02:00	30					30			30
03:00	36					36			36
04:00	109					109			109
05:00	356					356			356
06:00	<b>856</b>					<b>856</b>			<b>856</b>
07:00	842					842			842
08:00	676					676			676
09:00	564					564			564
10:00	530					530			530
11:00	531					531			531
12:00 PM	<b>519</b>			499		509			509
01:00				495		495			495
02:00				497		497			497
03:00				579		579			579
04:00				606		606			606
05:00				<b>623</b>		<b>623</b>			<b>623</b>
06:00				531		531			531
07:00				359		359			359
08:00				318		318			318
09:00				227		227			227
10:00				172		172			172
11:00				94		94			94
Day Total	5136	0	0	5000	0	9627	0	0	9627
% Avg. WKDay	53.3%	0.0%	0.0%	51.9%	0.0%	100.0%	0.0%	0.0%	53.3%
% Avg. Week	53.3%	0.0%	0.0%	51.9%	0.0%	100.0%	0.0%	0.0%	53.3%
AM Peak Vol.	06:00					06:00			06:00
	856					856			856
PM Peak Vol.	12:00			17:00		17:00			17:00
	519			623		623			623
Grand Total	5136	0	0	5000	0	9627	0	0	9627
ADT	Not Calculated								



# Traffic Signal Optimization Study Metro Nashville Signal System

N-S Street: Andrew Jackson Parkway  
E-W Street: Old Lebanon Dirt Road  
Intersection N.: 2878  
Counted By: STF

KHA 119012000

File Name : 2878  
Site Code : 00002878  
Start Date : 10/20/2005  
Page No : 1

Groups Printed- Unshifted

Start Time	Andrew Jackson Parkway Southbound W				Old Lebanon Dirt Road Westbound N				Andrew Jackson Parkway Northbound E				Old Lebanon Dirt Road Eastbound S				Int. Total
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	4	212	0	2	255	0	2	2	1	67	27	11	0	0	0	0	583
07:15 AM	7	177	0	4	201	0	8	1	1	91	56	6	0	0	0	0	556
07:30 AM	7	177	0	3	180	0	10	0	0	105	79	10	0	1	0	0	588
07:45 AM	8	218	2	7	193	0	9	8	9	98	35	8	0	0	0	0	626
Total	27	782	2	16	832	0	45	21	11	361	219	36	0	1	0	0	2356
08:00 AM	9	212	0	5	173	0	15	3	0	84	36	10	0	0	2	0	546
08:15 AM	6	189	0	2	119	0	40	7	0	96	29	6	0	0	0	0	497
08:30 AM	15	146	0	3	75	0	6	2	1	73	14	7	0	0	0	0	342
08:45 AM	5	143	0	3	74	1	9	3	0	87	25	7	0	0	0	0	367
Total	35	600	0	13	437	1	70	15	1	352	104	32	0	0	2	0	1752
*** BREAK ***																	
11:00 AM	17	107	0	9	64	0	5	0	0	225	16	11	0	1	0	1	459
11:15 AM	14	99	0	4	63	0	7	1	0	199	14	16	0	0	0	1	415
11:30 AM	17	126	0	7	63	0	11	1	7	210	17	3	1	0	0	0	460
11:45 AM	20	113	0	4	43	0	6	0	0	207	16	7	0	0	0	0	422
Total	58	445	0	24	233	0	29	2	7	841	65	38	1	1	2	2	1756
12:00 PM	15	100	0	6	53	0	15	0	1	270	27	12	0	0	0	0	490
12:15 PM	27	117	0	13	52	0	8	0	0	262	17	8	0	1	0	0	490
12:30 PM	8	128	0	7	71	0	12	1	0	284	15	11	1	0	0	0	503
12:45 PM	14	129	0	8	53	0	15	1	0	265	9	16	0	0	0	0	509
Total	64	474	0	32	229	0	48	2	1	1072	51	47	1	1	0	0	2022
*** BREAK ***																	
04:00 PM	56	102	0	6	43	0	9	5	0	208	157	13	0	2	0	0	607
04:15 PM	32	98	0	2	67	1	10	4	1	194	158	8	2	0	0	0	577
04:30 PM	35	115	1	1	69	0	16	5	0	228	144	8	0	0	0	0	621
04:45 PM	35	98	0	1	73	0	9	0	3	259	152	6	0	0	0	0	645
Total	158	413	1	10	263	1	44	14	4	890	511	38	2	2	0	0	2450
05:00 PM	36	136	0	0	83	0	14	3	2	215	168	1	0	0	0	0	657
05:15 PM	35	117	0	0	63	0	17	0	1	232	145	8	1	0	0	0	639
05:30 PM	39	157	0	0	91	0	14	3	2	246	177	3	1	1	0	0	706
05:45 PM	39	149	0	1	113	1	10	1	0	208	156	4	1	0	0	0	689
Total	149	559	0	1	373	1	55	7	5	901	620	18	3	1	0	0	2691
Grand Total:	531	3380	3	96	2367	3	291	61	29	4416	1670	206	7	6	5	2	13026
Approx %	12.7	84.8	0.1	2.4	57.3	0.1	10.7	2.2	0.5	89.8	28.4	3.3	35.0	30.0	25.0	10.0	
Total %	3.8	26.6	0.0	0.7	18.2	0.0	2.2	0.5	0.2	33.9	12.5	1.6	0.1	0.0	0.0	0.0	

Start Time	Left	Through	Right	Percent Trucks	Left	Through	Right	Percent Trucks	Left	Through	Right	Percent Trucks	Left	Through	Right	Percent Trucks	
7:00	27	782	2		832	0	45		11	361	219		0	1	0		
9:00	PH	0.75	0.91	0.25	2.0	0.82	—	0.59	2.9	0.31	0.86	0.69	6.4	—	0.25	—	0
12:00	Volume	64	474	0		229	0	48		1	1072	51		1	1	0	
1:00	PH	0.59	0.92	—	5.9	0.81	—	0.80	0.7	0.25	0.94	0.61	4.2	0.25	0.25	—	0
5:00	Volume	149	559	0		373	1	55		5	901	620		3	1	1	
6:00	PH	0.96	0.93	—	0.1	0.78	0.25	0.81	1.6	0.63	0.92	0.92	1.2	0.75	0.45	0.25	0



# Traffic Signal Optimization Study Metro Nashville Signal System

N-S Street: Chandler Road  
E-W Street: Old Lebanon Dirt Road  
Intersection No: 2879  
Counted By: STE

KHA 110012000

File Name : 2879  
Site Code : 00028781  
Start Date : 11/9/2005  
Page No : 1

Groups Printed: - Unshifted

Start Time	Chandler Road -Southbound- W				Old Lebanon Dirt Road -Westbound- N				Northbound				Old Lebanon Dirt Road -Eastbound- S				Int. Total
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00 AM	0	0	179	0	0	72	0	0	0	0	0	0	22	18	0	1	263
07:15 AM	1	0	131	2	0	69	2	1	0	0	0	0	27	18	0	3	274
07:30 AM	0	0	103	2	0	66	0	0	0	0	0	0	28	21	0	0	219
07:45 AM	1	0	91	4	0	61	0	2	0	0	0	0	38	25	0	7	230
Total	2	0	474	8	0	268	2	3	0	0	0	0	113	82	0	11	986
08:00 AM	0	0	85	4	0	69	0	2	0	0	0	0	31	24	0	2	218
08:15 AM	1	0	75	2	0	58	5	1	0	0	0	0	22	20	0	3	165
08:30 AM	2	0	68	1	0	48	0	0	0	0	0	0	19	18	0	0	157
08:45 AM	2	0	68	4	0	55	0	0	0	0	0	0	19	18	0	4	170
Total	5	0	296	11	0	208	5	3	0	0	0	0	91	80	0	9	710
*** BREAK ***																	
11:00 AM	0	0	41	2	0	39	0	1	0	0	0	0	34	26	0	1	143
11:15 AM	1	0	38	0	0	53	2	1	0	0	0	0	30	27	0	4	136
11:30 AM	3	0	42	1	0	37	2	0	0	0	0	0	28	29	0	0	142
11:45 AM	2	0	28	0	0	33	0	0	0	0	0	0	38	36	0	0	133
Total	6	0	147	3	0	142	2	2	0	0	0	0	128	118	0	5	556
12:00 PM	2	0	29	2	0	28	0	2	0	0	0	0	47	46	0	8	162
12:15 PM	0	0	45	1	0	27	0	3	0	0	0	0	38	32	0	1	145
12:30 PM	0	0	47	2	0	38	2	2	0	0	0	0	43	44	0	3	181
12:45 PM	0	0	34	1	0	33	0	3	0	0	0	0	37	28	0	1	137
Total	2	0	155	6	0	124	2	10	0	0	0	0	163	150	0	13	625
*** BREAK ***																	
04:00 PM	2	0	45	1	0	37	0	4	0	0	0	0	88	86	0	7	270
04:15 PM	2	0	54	0	0	48	7	1	0	0	0	0	117	85	0	4	316
04:30 PM	2	0	63	5	0	45	8	2	0	0	0	0	98	80	0	4	290
04:45 PM	0	0	49	1	0	51	3	1	0	0	0	0	117	84	0	2	288
Total	6	0	211	7	0	179	18	8	0	0	0	0	408	315	0	17	1167
05:00 PM	10	0	54	2	0	85	4	0	0	0	0	0	97	83	0	5	320
05:15 PM	1	0	48	0	0	52	0	1	0	0	0	0	124	89	0	3	319
05:30 PM	4	0	37	0	0	57	3	2	0	0	0	0	133	86	0	3	325
05:45 PM	0	0	58	0	0	82	0	0	0	0	0	0	107	76	0	1	364
Total	15	0	197	2	0	236	7	3	0	0	0	0	461	334	0	12	1268
Grand Total	36	0	1460	37	0	1177	43	29	0	0	0	0	1384	1079	0	67	5312
Approach %	2.3	0.0	95.3	7.4	0.0	94.2	3.4	2.3	0.0	0.0	0.0	0.0	54.3	43.0	0.0	2.7	
Total %	0.7	0.0	27.9	3.7	0.0	22.2	0.8	0.5	0.0	0.0	0.0	0.0	25.7	20.3	0.0	1.3	

Peak Hour		Left	Through	Right	Percent Trucks	Left	Through	Right	Percent Trucks	Left	Through	Right	Percent Trucks	Left	Through	Right	Percent Trucks
7:00	Volume	2	0	474		0	288	5						113	82	0	
8:00	PH	0.50	-	0.80	1.7	-	0.81	0.63	1.0					0.74	0.82	-	5.6
2:00	Volume	2	0	155		0	124	2						163	150	0	
3:00	PH	0.25	-	0.82	3.8	-	0.82	0.25	7.9					0.87	0.82	-	4.2
5:00	Volume	15	0	197		0	236	8						161	334	0	
6:00	PH	0.38	-	0.85	8.9	-	0.91	0.50	1.2					0.87	0.94	-	1.5





Exhibit 6. Crash Data

<b>Andrew Jackson Pkwy &amp; Old Lebanon Dirt Road</b>								
<b>Year</b>		<b>Severity</b>		<b>%</b>		<b>Dir</b>		<b>%</b>
2007	8	10 months	PDO	13	72%	NB	11	Andrew Jackson
2006	10		Inj	5	28%	SB	6	
			Fatal		0%	EB	3	Old Lebanon Dirt
Total	18					WB	10	
Avg	10					SB	3	Chandler
						unk	6	
<b>Time</b>		<b>Month</b>		<b>%</b>		<b>Type</b>		<b>%</b>
2400	1	Jan		0%		Rear-End	9	50%
100		Feb		3	17%	Head-On	1	6%
200		Mar		1	6%	Angle	8	44%
300		Apr		2	11%	Sideswipe		0%
400		May		3	17%	Ped		0%
500	1	Jun		4	22%	Left Turn		0%
600	3	Jul			0%			
700		Aug		3	17%	<b>Light</b>		
800		Sep			0%	Daylight	13	72%
900		Oct		1	6%	Dark	3	17%
1000		Nov			0%	Lighted	1	6%
1100	2	Dec		1	6%	Dawn	1	6%
1200						Dusk		0%
1300	2	<b>Day</b>						
1400	1	Mon		2	11%	<b>Weather</b>		
1500	1	Tue		1	6%	Not Adverse	16	89%
1600	1	Wed		3	17%	Rain	2	11%
1700	1	Thu		1	6%	Sleet		0%
1800	3	Fri		5	28%	Snow		0%
1900	1	Sat		3	17%	Fog		0%
2000	1	Sun		3	17%			
2100								
2200								
2300								

Exhibit 7. Existing LOS Calculations

AM

Andrew Jackson Parkway & Old Lebanon Dirt Road

2878 Old Lebanon Dirt Road & Andrew Jackson Parkway												
TIMING WINDOW												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	HOLD
Lanes and Sharing (#RL)	0	1	0	706	0	38	11	361	219	27	782	2
Traffic Volume (vph)	Split		Perm	Split	Perm	pm+pt	pm+pt		pm+pt	pm+pt		2
Turn Type	9	9	9	37	37	37	1	2	2	1	2	2
Protected Phases	9											
Permitted Phases	9											
Detector Phases	9											
Minimum Initial (s)	2.0											
Minimum Split (s)	8.0											
Total Split (s)	8.0											
Yellow Time (s)	4.0											
All-Red Time (s)	2.0											
Lead/Lag	Lead Lag											
Allow Lead/Lag Optimize?	Yes Yes											
Recall Mode	Max Max											
Actuated Effct. Green (s)	63.0 63.0 37.0 33.0											
Actuated g/C Ratio	0.52 0.52 0.31 0.28											
Volume to Capacity Ratio	0.93 0.08 0.30 0.74											
Control Delay (s)	36.6 6.7 24.3 21.6											
Queue Delay (s)	45.5 2.0 0.0 0.0											
Total Delay (s)	59.0 82.2 8.8 24.3 21.6											
Level of Service	E F A C C											
Approach Delay (s)	59.0 77.1 21.8											
Approach LOS	E E C											
Queue Length 50th (ft)	3 439 10 10 126											
Queue Length 95th (ft)	5 64 m9 9 m206											
Stops (vph)	2 436 8 5 313											
Fuel Used (g/hr)	0 10 0 0 13											

Options >
Controller Type: <b>Pretimed</b>
Cycle Length: <b>120.0</b>
Actuated C.L.: <b>120.0</b>
Natural C.L.: <b>110.0</b>
Max v/c Ratio: <b>1.11</b>
Int. Delay: <b>52.6</b>
Int. LOS: <b>D</b>
ICU: <b>74.9%</b>
ICU LOS: <b>D</b>
<input type="checkbox"/> Lock Timings
Offset Settings
Offset: <b>0.0</b>
Begin of Yellow <b>&gt;</b>
<input type="checkbox"/> 2+6 - Unassigned <b>&gt;</b>
<input type="checkbox"/> Master
<input type="checkbox"/> Single <b>&gt;</b>



Chandler Road & Old Lebanon Dirt Road

2879 Old Lebanon Dirt Road & Chandler Road										
Options >	TIMING WINDOW									
	EBL	EBT	WBT	WBR	SBL	SBR	PED	HOLD		
Controller Type: Pretimed	Lanes and Sharing (#RL)		↑	↑	↑		↑	↑	-	-
Cycle Length: 120.0	137	99	288	5	2	474	-	-	-	-
Actuated C.L.: 120.0	Turn Type		pm+pt	-	-	-	Perm	-	-	-
Natural C.L.: 130.0	Protected Phases		1 2 91 2 4 9	4	-	3				
Max v/c Ratio: 1.11	Permitted Phases		1 2 4 9				3	-	-	-
Int. Delay: 106.4	Detector Phases		1 2 91 2 4 9	4	-	3	3	-	-	-
Int. LOS: F	Minimum Initial (s)		-	-	2.0	-	2.0	2.0	-	-
ICU: 51.5%	Minimum Split (s)		-	-	8.0	-	8.5	8.5	-	-
ICU LOS: A	Total Split (s)		53.0	78.0	25.0		42.0	42.0	-	-
<input type="checkbox"/> Lock Timings	Yellow Time (s)		-	-	4.0	-	4.0	4.0	-	-
Offset Settings	All-Red Time (s)		-	-	2.0	-	2.0	2.0	-	-
Offset: 0.0	Lead/Lag		-	-	Lag	-	Lead	Lead	-	-
Begin of Yellow	Allow Lead/Lag Optimize?		-	-	Yes	-	Yes	Yes	-	-
2+6 - Unassign	Recall Mode		-	-	Max	-	Max	Max	-	-
<input type="checkbox"/> Master	Actuated Effct. Green (s)		70.0	74.0	21.0	-	38.0	38.0	-	-
Single	Actuated g/C Ratio		0.58	0.62	0.18	-	0.32	0.32	-	-
	Volume to Capacity Ratio		0.24	0.11	1.11	-	0.01	0.66	-	-
	Control Delay (s)		3.9	3.1	129.3	-	28.0	6.4	-	-
	Queue Delay (s)		1.1	1.9	155.9	-	0.0	43.1	-	-
	Total Delay (s)		5.0	5.0	285.2	-	28.0	49.5	-	-
	Level of Service		A	A	F	-	C	D	-	-
	Approach Delay (s)		-	5.0	285.2	-	49.3	-	-	-
	Approach LOS		-	A	F	-	D	-	-	-
	Queue Length 50th (ft)		13	9	~323	-	2	0	-	-
	Queue Length 95th (ft)		17	m12	#438	-	6	31	-	-
	Stops (vph)		14	10	243	-	2	41	-	-
	Fuel Used (g/hr)		0	0	12	-	0	5	-	-

Andrew Jackson Parkway & Old Lebanon Dirt Road

2878 Old Lebanon Dirt Road & Andrew Jackson Parkway

Andrew Jackson Parkway

**TIMING WINDOW**

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	PED	HOLD
Lanes and Sharing (#RL)	3	1	1	376	1	56	5	901	620	149	556	0		
Traffic Volume (vph)	Split		Perm	Split		Perm	pm+pt			pm+pt				
Turn Type	9	9	9	37	37	37	2			2				
Protected Phases														
Permitted Phases														
Detector Phases	9	9	9	37	37	37	1	2		1	2			
Minimum Initial (s)														
Minimum Split (s)	2.0		2.0	2.0		2.0		2.0		2.0		2.0		
Total Split (s)	8.0		8.0	8.0		8.0		8.0		8.0		8.0		
Yellow Time (s)	8.0		8.0	8.0		8.0		8.0		8.0		8.0		
All-Red Time (s)	4.0		4.0	4.0		4.0		4.0		4.0		4.0		
Lead/Lag	2.0		2.0	2.0		2.0		2.0		2.0		2.0		
Allow Lead/Lag Optimize?														
Recall Mode	Max		Max	Max		Max		Max		Max		Max		
Actuated Effct. Green (s)	4.0		4.0	54.0		54.0		43.0		56.0		43.0		
Actuated g/C Ratio	0.03		0.03	0.42		0.42		0.33		0.43		0.33		
Volume to Capacity Ratio	0.15		0.08	0.64		0.11		1.36		0.65		0.52		
Control Delay (s)	67.2		41.0	19.2		5.9		193.3		39.6		37.1		
Queue Delay (s)	0.0		0.0	15.2		2.3		0.0		0.0		0.0		
Total Delay (s)	67.2		41.0	34.5		8.2		193.3		39.6		37.1		
Level of Service	E		D	C		A		B		D		D		
Approach Delay (s)	58.5			30.9				192.4		37.6				
Approach LOS	E			C				F		D				
Queue Length 50th (ft)	7		0	144		5		~931		75		221		
Queue Length 95th (ft)	7		1	48		m16		m384		150		280		
Stops (vph)	5		1	144		6		4 1089		96		439		
Fuel Used (g/hr)	0		0	3		0		0 89		3		12		

**Options >**

Controller Type: Pretimed

Cycle Length: 130.0

Actuated C.L.: 130.0

Natural C.L.: 120.0

Max v/c Ratio: 1.36

Int. Delay: 122.6

Int. LOS: F

ICU: 90.6%

ICU LOS: E

Lock Timings

Offset Settings

Offset: 30.0

Begin of Yellow >

2+6 - Unassigned >

Master

Single >

Andrew Jackson Parkway & Old Lebanon Dirt Road  
Page 39



Chandler Road & Old Lebanon Dirt Road

Options >		TIMING WINDOW		EBL	EBT	WBT	WBR	SBL	SBR	PED	HOLD
Controller Type: Pretimed		Lanes and Sharing (#RL)		↑	↑	↑		↑	↑	-	-
Cycle Length: 130.0		Traffic Volume (vph)	446	323	236	8	197	15		-	-
Actuated C.L.: 130.0		Turn Type	pm+pt	-	-	-	-	Perm		-	-
Natural C.L.: 120.0		Protected Phases	1 2 91 2 4 9		4			3			
Max v/c Ratio: 1.36		Permitted Phases	1 2 4 9						3	-	-
Int. Delay: 29.2		Detector Phases	1 2 91 2 4 9		4			3	3	-	-
Int. LOS: C		Minimum Initial (s)	-	-	2.0	-		2.0	2.0	-	-
ICU: 58.5%		Minimum Split (s)	-	-	8.0	-		8.5	8.5	-	-
ICU LOS: B		Total Split (s)	72.0	102.0	30.0	-		28.0	28.0	-	-
<input type="checkbox"/> Lock Timings		Yellow Time (s)	-	-	4.0	-		4.0	4.0	-	-
Offset Settings		All-Red Time (s)	-	-	2.0	-		2.0	2.0	-	-
Offset: 30.0		Lead/Lag	-	-	Lag	-		Lead	Lead	-	-
Begin of Yellow		Allow Lead/Lag Optimize?	-	-	Yes	-		Yes	Yes	-	-
2+6 - Unassign		Recall Mode	-	-	Max	-		Max	Max	-	-
<input type="checkbox"/> Master		Actuated Effct. Green (s)	94.0	98.0	26.0	-		24.0	24.0	-	-
Single		Actuated g/C Ratio	0.72	0.75	0.20	-		0.18	0.18	-	-
		Volume to Capacity Ratio	0.50	0.24	0.74	-		0.71	0.12	-	-
		Control Delay (s)	2.6	2.0	61.4	-		62.8	13.9	-	-
		Queue Delay (s)	5.7	11.7	0.0	-		0.0	0.1	-	-
		Total Delay (s)	8.3	13.7	61.4	-		62.8	14.1	-	-
		Level of Service	A	B	E	-		E	B	-	-
		Approach Delay (s)	-	10.5	61.4	-		55.8	-	-	-
		Approach LOS	-	B	E	-		E	-	-	-
		Queue Length 50th (ft)	34	23	218	-		186	0	-	-
		Queue Length 95th (ft)	m28	m19	#325	-		260	0	-	-
		Stops (vph)	35	23	222	-		182	4	-	-
		Fuel Used (g/hr)	1	1	7	-		5	0	-	-



Exhibit 8. Sidewalk Plan





Exhibit 9. Bikeway Plan



Exhibit 10. Community Plan

---

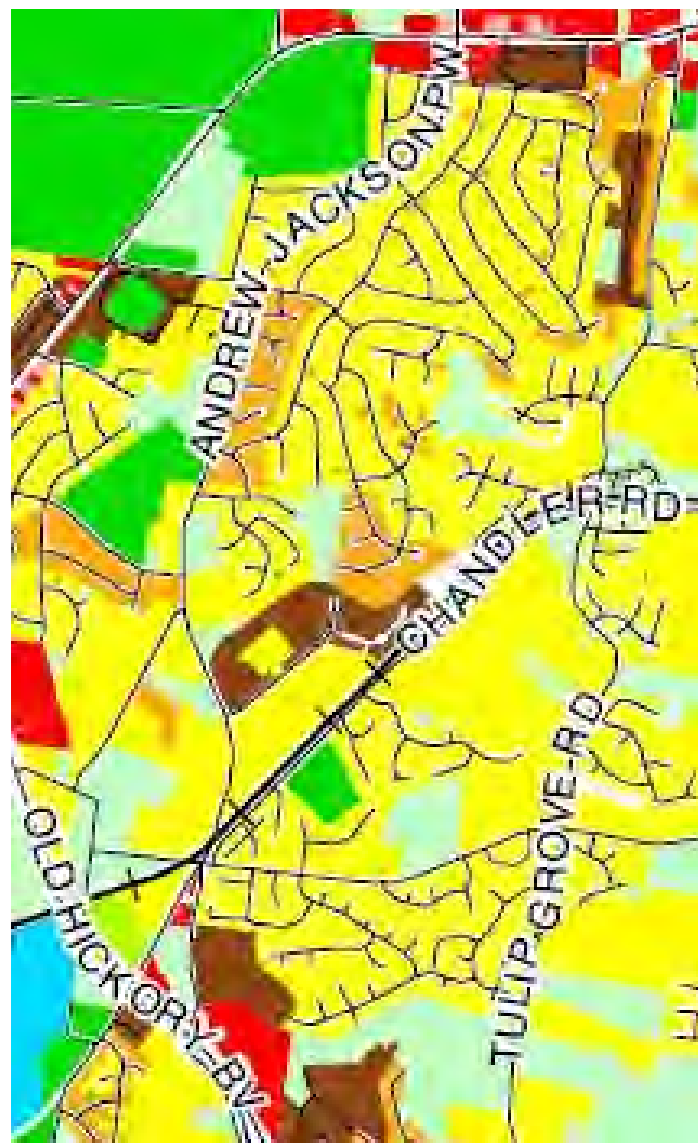
**Donelson - Hermitage -  
Old Hickory  
Community Plan  
2004 Update**  
adopted October 14, 2004



# EXISTING LAND USE




## General Land Use Groups

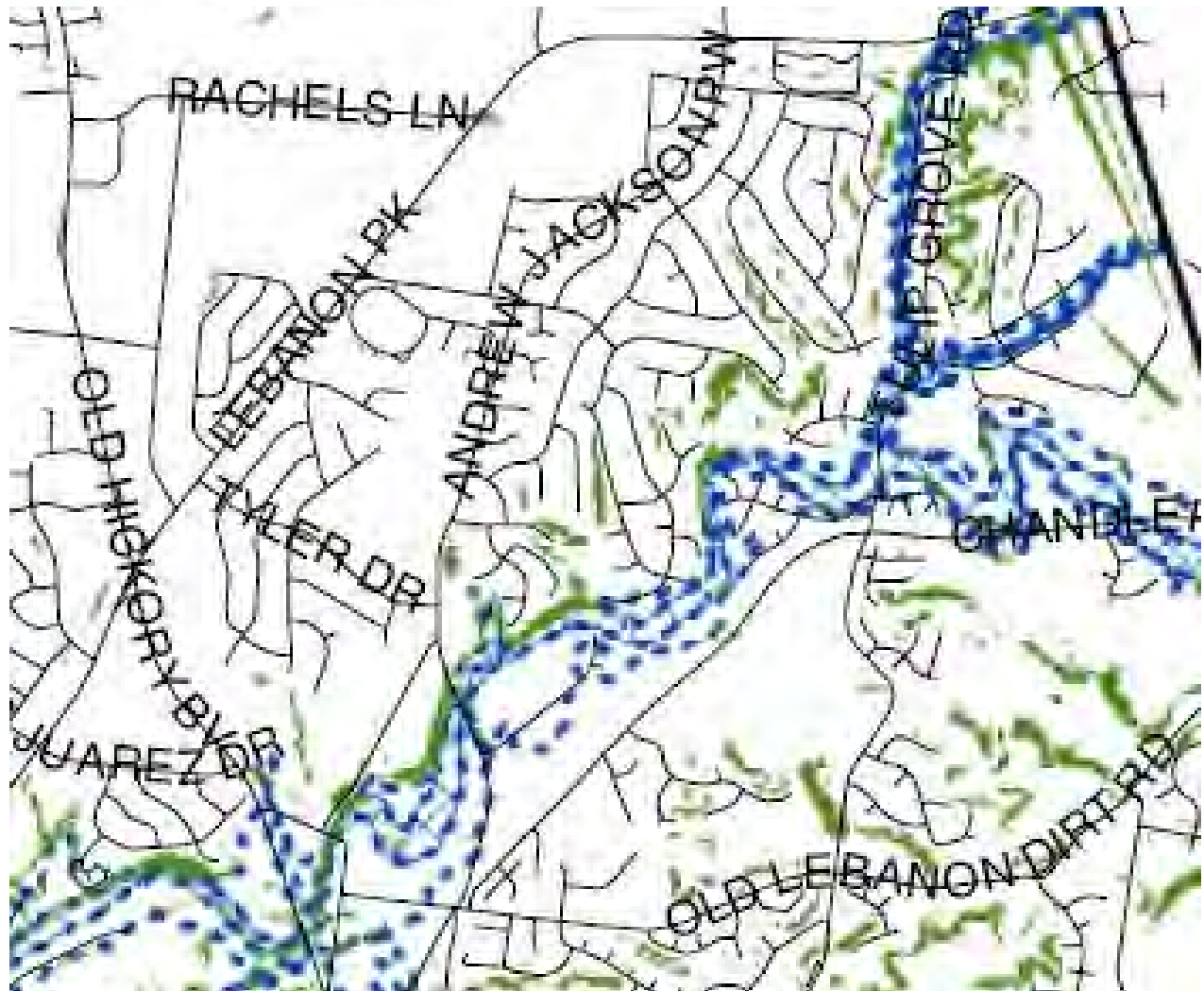
-  Park or Golf Course
-  Residential - 1 Unit
-  Residential - 2 or 3 Unit
-  Residential - 4 Unit +
-  Residential - Nonhousehold
-  Community, Institutional or Utility
-  Office or Medical
-  Commercial
-  Auto Parking
-  Industrial
-  Vacant or Farm
-  Major Water Body
-  Railroad



# NATURAL FEATURES

## Feature

-  Flood Plain
-  Floodway
-  20%+ Slopes
-  Major Water Body



HISTORIC  
RESOURCES





# STRUCTURE PLAN

Adopted October 14, 2004





# PEDESTRIAN AND BICYCLE NETWORK PLAN

- |                                     |  |
|-------------------------------------|--|
| <b>Existing Trail</b>               | <b>Existing Streets</b>                                |
| — Existing Trail                    | — Streets  |
| <b>Bicycle Vision Plan</b>          | — Freeway or Expressway                                |
| — Bike Lane                         | <b>Proposed Bicycle Facilities from Community Plan</b> |
| — Bikeway (Wide Outside Lane)       | ••• Proposed Bike Lane                                 |
| — Trail Under Development           | ••• Proposed Bikeway (Wide Outside Lane)               |
| — Rail with Trail Under Development | ☆ Existing Trailhead                                   |
| — Identified Greenway               | ▲ Planned Trailhead                                    |
| — Railroads                         | ◆ Proposed Trailhead                                   |



Exhibit 11. LOS Calculations Proposed Improvements

AM

Andrew Jackson Parkway & Old Lebanon Dirt Road

2878 Old Lebanon Dirt Road & Andrew Jackson Parkway

Andrew Jackson Parkway

TIMING WINDOW		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	PED	HOLD
Lanes and Sharing (#RL)		0	1	0	706	0	38	11	361	219	27	782	2		
Traffic Volume (vph)		Split		Perm	Split	Perm	pm+pt	Perm	pm+pt	Perm	pm+pt				
Turn Type		9	9	9	37	37	37	2	2	2	2				
Protected Phases		9		9	37		37	2	2	2	2				
Permitted Phases		9		9	37		37	1	2	2	1	2			
Detector Phases		2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0			
Minimum Initial (s)		8.0		8.0	8.0		8.0	8.0	36.0	36.0	8.0	36.0			
Minimum Split (s)		8.0		8.0	109.0		109.0	8.0	37.0	37.0	8.0	37.0			
Total Split (s)		4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0			
Yellow Time (s)		2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0			
All-Red Time (s)								Lead	Lag	Lag	Lead	Lag			
Lead/Lag								Yes	Yes	Yes	Yes	Yes			
Allow Lead/Lag Optimize?								Max	Max	Max	Max	Max			
Recall Mode		Max		Max	Max		Max	Max	Max	Max	Max	Max			
Actuated Effct. Green (s)		4.0		4.0	63.0		63.0	37.0	33.0	33.0	37.0	33.0			
Actuated g/C Ratio		0.03		0.03	0.52		0.52	0.31	0.28	0.28	0.31	0.28			
Volume to Capacity Ratio		0.07		0.07	0.93		0.93	0.30	0.44	0.49	0.14	0.90			
Control Delay (s)		59.0		59.0	36.6		6.7	24.3	24.9	3.4	28.1	54.8			
Queue Delay (s)		0.0		0.0	45.5		2.0	0.0	0.0	0.0	0.0	0.0			
Total Delay (s)		59.0		59.0	82.2		8.8	24.3	24.9	3.4	28.1	54.8			
Level of Service		E		E	F		A	C	C	A	C	D			
Approach Delay (s)		59.0		59.0	77.1		77.1	16.0	16.0	16.0	53.7	53.7			
Approach LOS		E		E	E		E	B	B	B	D	D			
Queue Length 50th (ft)		3		3	439		10	10	90	4	19	340			
Queue Length 95th (ft)		5		5	64		m9	9	m144	m6	36	#454			
Stops (vph)		2		2	436		8	5	212	19	19	714			
Fuel Used (g/hr)		0		0	10		0	0	8	3	1	21			

Options >

Controller Type: Pretimed

Cycle Length: 120.0

Actuated C.L.: 120.0

Natural C.L.: 110.0

Max v/c Ratio: 1.11

Int. Delay: 50.9

Int. LOS: D

ICU: 74.9%

ICU LOS: D

Lock Timings

Offset Settings

Offset: 0.0

Begin of Yellow: 2+6 - Unassign

Master

Single



Chandler Road & Old Lebanon Dirt Road

Options >		TIMING WINDOW		EBL	EBT	WBT	WBR	SBL	SBR	PED	HOLD
Controller Type:	Pretimed	Lanes and Sharing (#RL)									
Cycle Length:	120.0	Traffic Volume (vph)	137	99	288	5	2	474			
Actuated C.L.:	120.0	Turn Type	pm+pt					Perm			
Natural C.L.:	110.0	Protected Phases	1 2 91 2 4 9		4			3			
Max v/c Ratio:	1.11	Permitted Phases	1 2 4 9						3		
Int. Delay:	92.2	Detector Phases	1 2 91 2 4 9		4			3 3			
Int. LOS:	F	Minimum Initial (s)			2.0			2.0 2.0			
ICU:	51.5%	Minimum Split (s)			8.0			8.5 8.5			
ICU LOS:	A	Total Split (s)	53.0	78.0	25.0			42.0 42.0			
<input type="checkbox"/> Lock Timings		Yellow Time (s)			4.0			4.0 4.0			
Offset Settings	Offset: 0.0	All-Red Time (s)			2.0			2.0 2.0			
Begin of Yellow		Lead/Lag			Lag			Lead Lead			
2+6 - Unassign		Allow Lead/Lag Optimize?			Yes			Yes Yes			
<input type="checkbox"/> Master		Recall Mode			Max			Max Max			
Single		Actuated Effct. Green (s)	70.0	74.0	21.0			38.0 38.0			
		Actuated g/C Ratio	0.58	0.62	0.18			0.32 0.32			
		Volume to Capacity Ratio	0.24	0.11	1.11			0.01 0.66			
		Control Delay (s)	10.7	6.7	129.3			28.0 6.4			
		Queue Delay (s)	0.9	1.4	109.1			0.0 38.8			
		Total Delay (s)	11.6	8.1	238.4			28.0 45.2			
		Level of Service	B	A	F			C D			
		Approach Delay (s)		10.2	238.4			45.1			
		Approach LOS		B	F			D			
		Queue Length 50th (ft)	36	23	~323			2 0			
		Queue Length 95th (ft)	50	38	#438			6 31			
		Stops (vph)	44	26	243			2 41			
		Fuel Used (g/hr)	1	0	12			0 5			

Andrew Jackson Parkway & Old Lebanon Dirt Road

Options >

Controller Type: Pretimed

Cycle Length: 130.0

Actuated C.L.: 130.0

Natural C.L.: 90.0

Max v/c Ratio: 0.82

Int. Delay: 29.7

Int. LOS: C

ICU: 70.7%

ICU LOS: C

Lock Timings

Offset Settings

Offset: 30.0

Begin of Yellow ▼

2+6 - Unassigned ▼

Master

Single ▼

2878 Old Lebanon Dirt Road & Andrew Jackson Parkway														
TIMING WINDOW														
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	PED	HOLD
Lanes and Shading (#RL)	3	1	1	376	1	56	5	901	620	149	556	0		
Traffic Volume (vph)	Split		Perm	Split	Perm	Perm	pm+pt	pm+pt	Perm	pm+pt				
Turn Type	9	9	9	37	37	37	2	2	2	1	2	2		
Protected Phases	9	9	9	37	37	37	1	2	2	1	2	2		
Permitted Phases														
Detector Phases														
Minimum Initial (s)	2.0	2.0	2.0				2.0	2.0	2.0	2.0	2.0	2.0		
Minimum Split (s)	8.0	8.0	8.0				8.0	36.0	36.0	8.0	36.0			
Total Split (s)	8.0	8.0	8.0	86.0	86.0	86.0	17.0	47.0	47.0	17.0	47.0			
Yellow Time (s)	4.0	4.0	4.0				4.0	4.0	4.0	4.0	4.0			
All-Red Time (s)	2.0	2.0	2.0				2.0	2.0	2.0	2.0	2.0			
Lead/Lag														
Allow Lead/Lag Optimize?														
Recall Mode	Max	Max	Max				Max	Max	Max	Max	Max			
Actuated Effct. Green (s)	4.0		4.0	54.0			54.0	43.0	43.0	56.0	43.0			
Actuated g/C Ratio	0.03		0.03	0.42			0.42	0.33	0.33	0.43	0.33			
Volume to Capacity Ratio	0.15		0.08	0.64			0.11	0.02	0.82	0.72	0.65	0.52		
Control Delay (s)	67.2		41.0	19.2			5.9	20.0	38.3	4.7	39.6	37.1		
Queue Delay (s)	130.2		0.0	15.2			2.3	0.0	0.0	0.6	0.0	0.0		
Total Delay (s)	197.5		41.0	34.5			8.2	20.0	38.3	5.4	39.6	37.1		
Level of Service	F		D	C			A	B	D	A	D	D		
Approach Delay (s)	145.3			30.9				24.9			37.6			
Approach LOS	F			C				C			D			
Queue Length 50th (ft)	7		0	144			5	3	371	52	75	221		
Queue Length 95th (ft)	7		1	48			m16	m3	m196	m0	150	280		
Stops (vph)	5		1	144			6	4	788	104	96	439		
Fuel Used (g/hr)	0		0	3			0	0	26	9	3	12		



Chandler Road & Old Lebanon Dirt Road

Options >		2879 Old Lebanon Dirt Road & Chandler Road									
		TIMING WINDOW		↖	→	↙	↗	↘	↖	⚠	⬛
		EBL	EBT	WBT	WBR	SBL	SBR	PED	HOLD		
Controller Type:	Pretimed	Lanes and Sharing (#RL)		↖	↗	↖	↗	—	—		
Cycle Length:	130.0	Traffic Volume (vph)		446	323	236	8	197	15		
Actuated C.L.:	130.0	Turn Type		pm+pt	—	—	—	—	Perm		
Natural C.L.:	90.0	Protected Phases		1 2 91 2 4 9	4	—	3	—			
Max v/c Ratio:	0.82	Permitted Phases		1 2 4 9	—	—	—	3	—		
Int. Delay:	28.4	Detector Phases		1 2 91 2 4 9	4	—	3	3	—		
Int. LOS:	C	Minimum Initial (s)		—	—	2.0	—	2.0	2.0		
ICU:	58.5%	Minimum Split (s)		—	—	8.0	—	8.5	8.5		
ICU LOS:	B	Total Split (s)		72.0	102.0	30.0	—	28.0	28.0		
<input type="checkbox"/> Lock Timings		Yellow Time (s)		—	—	4.0	—	4.0	4.0		
<input type="checkbox"/> Offset Settings		All-Red Time (s)		—	—	2.0	—	2.0	2.0		
Offset:	30.0	Lead/Lag		—	—	Lag	—	Lead	Lead		
Begin of Yellow	↕	Allow Lead/Lag Optimize?		—	—	Yes	—	Yes	Yes		
2+6 - Unassign	↕	Recall Mode		—	—	Max	—	Max	Max		
<input type="checkbox"/> Master		Actuated Effct. Green (s)		94.0	98.0	26.0	—	24.0	24.0		
Single	↕	Actuated g/C Ratio		0.72	0.75	0.20	—	0.18	0.18		
		Volume to Capacity Ratio		0.50	0.24	0.74	—	0.71	0.12		
		Control Delay (s)		9.4	3.6	61.4	—	62.8	13.9		
		Queue Delay (s)		1.9	2.4	0.0	—	0.0	0.1		
		Total Delay (s)		11.2	6.1	61.4	—	62.8	14.1		
		Level of Service		B	A	E	—	E	B		
		Approach Delay (s)		—	9.2	61.4	—	55.8	—		
		Approach LOS		—	A	E	—	E	—		
		Queue Length 50th (ft)		87	53	218	—	186	0		
		Queue Length 95th (ft)		85	58	#325	—	260	0		
		Stops (vph)		150	60	222	—	182	4		
		Fuel Used (g/hr)		3	1	7	—	5	0		



Exhibit 12. LOS Calculations Additional Improvements

AM

Andrew Jackson Parkway & Old Lebanon Dirt Road

2878 Old Lebanon Dirt Road & Andrew Jackson Parkway

2878 Old Lebanon Dirt Road & Andrew Jackson Parkway

**TIMING WINDOW**

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	HOLD
Lanes and Sharing (#RL)	0	1	0	706	0	38	11	361	219	27	782	2	
Traffic Volume (vph)	Split		Perm		Split		pm+pt		Perm		pm+pt		
Turn Type	9		9		37		1		2		1		2
Protected Phases	9		9		9		2		2		2		
Permitted Phases	9		9		37		1		2		1		2
Detector Phases	2.0		2.0		2.0		2.0		2.0		2.0		2.0
Minimum Initial (s)	8.0		8.0		8.0		8.0		36.0		8.0		36.0
Minimum Split (s)	8.0		8.0		103.0		8.0		42.0		8.0		42.0
Total Split (s)	4.0		4.0		4.0		4.0		4.0		4.0		4.0
Yellow Time (s)	2.0		2.0		2.0		2.0		2.0		2.0		2.0
All-Red Time (s)	-		-		-		-		-		-		Lead
Lead/Lag	-		-		-		-		-		-		Lag
Allow Lead/Lag Optimize?	-		-		-		-		-		-		Yes
Recall Mode	Max		Max		Max		Max		Max		Max		Max
Actuated Effct. Green (s)	-		4.0		58.0		42.0		38.0		42.0		38.0
Actuated g/C Ratio	-		0.03		0.48		0.35		0.32		0.35		0.32
Volume to Capacity Ratio	-		0.07		0.60		0.28		0.39		0.45		0.12
Control Delay (s)	-		59.0		19.3		21.3		21.5		24.5		42.9
Queue Delay (s)	-		0.0		1.1		0.0		0.0		0.0		0.0
Total Delay (s)	-		59.0		20.4		21.3		21.5		24.5		42.9
Level of Service	-		E		C		C		C		A		D
Approach Delay (s)	-		59.0		18.8		-		13.8		-		42.2
Approach LOS	-		E		B		-		B		-		D
Queue Length 50th (ft)	-		3		172		10		74		17		319
Queue Length 95th (ft)	-		5		245		9		m125		33		398
Stops (vph)	-		2		212		5		190		10		17
Fuel Used (g/hr)	-		0		4		0		8		3		0

Options >

Controller Type: Pretimed

Cycle Length: 120.0

Actuated C.L.: 120.0

Natural C.L.: 90.0

Max v/c Ratio: 0.78

Int. Delay: 25.5

Int. LOS: C

ICU: 56.5%

ICU LOS: B

Lock Timings

Offset Settings

Offset: 0.0

Begin of Yellow Begin of Yellow

2+6 - Unassigned 2+6 - Unassigned

Master Master

Single Single

Chandler Road & Old Lebanon Dirt Road

Options >		TIMING WINDOW		EBL	EBT	WBT	WBR	SBL	SBR	PED	HOLD
Controller Type:	Pretimed	Lanes and Sharing (#RL)									
Cycle Length:	120.0	Traffic Volume (vph)	137	99	288	5	2	474			
Actuated C.L.:	120.0	Turn Type	pm+pt					Perm			
Natural C.L.:	90.0	Protected Phases	1 2 91 2 4 9		4			3			
Max v/c Ratio:	0.78	Permitted Phases	1 2 4 9					3			
Int. Delay:	21.7	Detector Phases	1 2 91 2 4 9		4			3 3			
Int. LOS:	C	Minimum Initial (s)			2.0			2.0 2.0			
ICU:	35.6%	Minimum Split (s)			8.0			8.5 8.5			
ICU LOS:	A	Total Split (s)	58.0	79.0	21.0			41.0 41.0			
<input type="checkbox"/> Lock Timings		Yellow Time (s)			4.0			4.0 4.0			
Offset Settings		All-Red Time (s)			2.0			2.0 2.0			
Offset:	0.0	Lead/Lag			Lag			Lead Lead			
Begin of Yellow		Allow Lead/Lag Optimize?			Yes			Yes Yes			
2+6 - Unassign		Recall Mode			Max			Max Max			
<input type="checkbox"/> Master		Actuated Effct. Green (s)	71.0	75.0	17.0			37.0 37.0			
Single		Actuated g/C Ratio	0.59	0.62	0.14			0.31 0.31			
		Volume to Capacity Ratio	0.22	0.11	0.72			0.44 0.45			
		Control Delay (s)	9.0	6.4	58.0			5.8 5.8			
		Queue Delay (s)	0.8	1.3	0.0			0.2 0.3			
		Total Delay (s)	9.8	7.7	58.0			6.1 6.0			
		Level of Service	A	A	E			A A			
		Approach Delay (s)		9.0	58.0			6.1			
		Approach LOS		A	E			A			
		Queue Length 50th (ft)	35	22	143			2 0			
		Queue Length 95th (ft)	49	37	174			0 37			
		Stops (vph)	39	26	274			24 22			
		Fuel Used (g/hr)	1	0	8			3 3			



Andrew Jackson Parkway & Old Lebanon Dirt Road

Options >

Controller Type: Pretimed

Cycle Length: 130.0

Actuated C.L.: 130.0

Natural C.L.: 80.0

Max v/c Ratio: 0.74

Int. Delay: 26.0

Int. LOS: C

ICU: 62.0%

ICU LOS: B

Lock Timings

Offset Settings

Offset: 30.0

Begin of Yellow ▼

2+6 - Unassigned ▼

Master

Single ▼

2878 Old Lebanon Dirt Road & Andrew Jackson Parkway														
TIMING WINDOW														
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	PED	HOLD
Lanes and Sharing (#RL)	3	1	1	376	1	56	5	901	620	149	556	0		
Traffic Volume (vph)	Split		Perm	Split	pm+pt		pm+pt	Perm	Perm	pm+pt				
Turn Type	9	9	9	37	37		1	2	2	1	2			
Protected Phases														
Permitted Phases	9													
Detector Phases	9 9 9 9 37 37													
Minimum Initial (s)	2.0 2.0 2.0													
Minimum Split (s)	8.0 8.0 8.0													
Total Split (s)	8.0 8.0 8.0 82.4 82.4													
Yellow Time (s)	4.0 4.0 4.0													
All-Red Time (s)	2.0 2.0 2.0													
Lead/Lag	-													
Allow Lead/Lag Optimize?	-													
Recall Mode	Max		Max		Max		Max		Max		Max		Max	
Actuated Effct. Green (s)	4.0		4.0		47.2		47.2		62.8		47.8		47.8	
Actuated g/C Ratio	0.03		0.03		0.36		0.36		0.48		0.37		0.37	
Volume to Capacity Ratio	0.15		0.08		0.46		0.43		0.02		0.74		0.68	
Control Delay (s)	67.2		41.0		20.8		17.7		16.8		33.8		3.5	
Queue Delay (s)	172.5		0.0		11.2		6.6		0.0		0.0		0.0	
Total Delay (s)	239.8		41.0		32.0		24.3		16.8		33.8		4.1	
Level of Service	F		D		C		C		B		C		A	
Approach Delay (s)	173.5		-		-		28.3		-		21.7		-	
Approach LOS	F		-		-		C		-		C		-	
Queue Length 50th (ft)	7		0		93		75		3		326		40	
Queue Length 95th (ft)	7		1		120		20		m3		m181		m0	
Stops (vph)	5		1		98		74		4		709		70	
Fuel Used (g/hr)	0		0		2		2		0		24		9	

Chandler Road & Old Lebanon Dirt Road

Options >		TIMING WINDOW		EBL	EBT	WBT	WBR	SBL	SBR	PED	HOLD
Controller Type: Pretimed		Lanes and Sharing (#RL)									
Cycle Length: 130.0	Actuated C.L.: 130.0	Traffic Volume (vph)	446	323	236	8	197	15			
Natural C.L.: 80.0	Max v/c Ratio: 0.74	Turn Type	pm+pt					Perm			
Int. Delay: 26.5	Int. LOS: C	Protected Phases	1 2 91 2 4 9		4			3			
ICU: 52.7%	ICU LOS: A	Permitted Phases	1 2 4 9						3		
<input type="checkbox"/> Lock Timings	Offset Settings	Detector Phases	1 2 91 2 4 9		4			3	3		
Offset: 30.0	Begin of Yellow	Minimum Initial (s)			2.0			2.0	2.0		
2+6 - Unassign	2+6 - Unassign	Minimum Split (s)			8.0			8.5	8.5		
<input type="checkbox"/> Master	Single	Total Split (s)	78.8	98.8	20.0			31.2	31.2		
		Yellow Time (s)			4.0			4.0	4.0		
		All-Red Time (s)			2.0			2.0	2.0		
		Lead/Lag			Lag			Lead	Lead		
		Allow Lead/Lag Optimize?			Yes			Yes	Yes		
		Recall Mode			Max			Max	Max		
		Actuated Effct. Green (s)	90.8	94.8	16.0			27.2	27.2		
		Actuated g/C Ratio	0.70	0.73	0.12			0.21	0.21		
		Volume to Capacity Ratio	0.46	0.25	0.63			0.63	0.11		
		Control Delay (s)	8.6	4.5	60.5			55.3	13.1		
		Queue Delay (s)	1.2	1.8	0.0			0.0	0.1		
		Total Delay (s)	9.8	6.4	60.5			55.3	13.1		
		Level of Service	A	A	E			E	B		
		Approach Delay (s)		8.4	60.5			49.3			
		Approach LOS		A	E			D			
		Queue Length 50th (ft)	103	63	115			180	0		
		Queue Length 95th (ft)	101	69	164			252	0		
		Stops (vph)	158	69	225			178	4		
		Fuel Used (g/hr)	3	1	7			5	0		



Exhibit 13. Cost Estimate

<b>Project Name:</b>	Andrew Jackson, Chandler & Old Lebanon Dirt	<b>Project No.:</b>	06PW0030
<b>Project Description:</b>	Total Intersection Improvements		
<b>Last Updated:</b>	1/28/2008	RWW	
			<b>Budget Subtotals</b>
			<b>Operational      Capital</b>
<b>Right-of-Way</b>			
Land, Improvements, Damages		\$40,000.00	
10' Temporary Construction Easement on both sides		\$16,000.00	
<i>Total Right-of-Way Cost</i>			<i>\$0      \$56,000</i>
<b>Utility &amp; Traffic Signal Relocation</b>			
Non-Reimbursable		\$0.00	
<i>Total Utility Relocation Cost</i>			<i>\$0      \$0</i>
<b>Construction</b>			
Staking of Lines and Grades	✓	\$25,000	
Clearing and Grubbing/Demolition	✓	\$25,000	
Grading/Excavation	✓	\$20,700	
Erosion Control	✓	\$2,400	
Paving	✓	\$180,200	
Drainage	✓	\$92,000	
Concrete	✓	\$18,000	
Traffic Control	✓	\$17,300	
Permanent Traffic Control	✓	\$7,700	
Landscaping	✓	\$3,400	
Traffic Signal	✓	\$173,600	
<i>Total Construction Cost</i>			<i>\$0      \$566,000</i>
<b>Construction Management</b>			
Construction Survey @ 2% of Total Construction Cost			\$0      \$12,000
Construction Management @ 3% of Total Construction Cost			\$0      \$17,000
Construction Inspection @ 5% of Total Construction Cost			\$0      \$29,000
Project Closeout @ 0.4% of Total Construction Cost			\$0      \$3,000
<b>Engineering</b>			
Planning / Scoping @ 0.5% of Total Construction Cost			\$0      \$3,000
Surveying @ 1.5% of Total Construction Cost			\$0      \$9,000
Design @ 13% of Total Construction Cost			\$0      \$74,000
Design Administration @ 2% of Total Construction Cost			\$0      \$12,000
Signal Design & Coordination			\$0      \$24,000
<b>Contingency (20%)</b>	✓		<b>\$0      \$161,000</b>
<b>TOTALS</b>			<b>\$0      \$966,000</b>



Cost estimate for right turn lane on Andrew Jackson Pkwy

Andrew Jackson Parkway RT Lane Intersection with Old Lebanon Dirt Road Cost Estimate				Created:	11/30/07	
				Updated:	01/28/08	
ITEM NO.	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE	Notes
105-01	CONSTRUCTION STAKES, LINES AND GRADES	LS	1	\$25,000.00	\$25,000.00	
201-01	CLEARING AND GRUBBING	LS	1	\$25,000.00	\$25,000.00	Includes removal of existing sidewalk
203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	C.Y.	400	\$20.00	\$8,000.00	350', 12' lane, 2' deep plus 3' for C&G
203-07	FURNISHING & SPREADING TOPSOIL	C.Y.	50	\$20.00	\$1,000.00	400', 10', 4"
209-08.03	TEMPORARY SILT FENCE (WITHOUT BACKING)	L.F.	400	\$2.00	\$800.00	Length of project
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	275	\$20.00	\$5,500.00	10" x 350' x 12'
307-01.01	ASPHALT CONCRETE MIX (PG64-22) GRADING A	TON	125	\$80.00	\$10,000.00	4" x 350' x 12'
307-01.08	ASPHALT CONCRETE MIX (PG64-22) GRADING B-M2	TON	60	\$80.00	\$4,800.00	2" x 350' x 12'
402-01	BITUMINOUS MATERIAL FOR PRIME COAT (PC)	TON	1	\$500.00	\$500.00	Asphalt area = 12'x350' (Use 500)
402-02	AGGREGATE FOR COVER MATERIAL (PC)	TON	3	\$50.00	\$150.00	10000 SF
403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	1	\$400.00	\$400.00	Use 1 TON
403-02	ASPHALT CEMENT FOR TACK COAT (TC)	TON	1	\$400.00	\$400.00	Use 1 TON
411-01.01	ASPHALT CEMENT (PG64-22) (ACS) GRADING D	TON	40	\$300.00	\$12,000.00	1.5"x4500 SF
411-01.02	AGGREGATE (ACS) GRADING D	TON	40	\$50.00	\$2,000.00	1.5"x4500 SF
607-03.02	18" CONCRETE PIPE CULVERT (CLASS III)	L.F.	400	\$60.00	\$24,000.00	Length of project, 1 side
611-12.01	CATCH BASINS	EACH	2	\$2,500.00	\$5,000.00	
701-02	CONCRETE DRIVEWAY (6")	S.F.	2000	\$6.00	\$12,000.00	2 driveways, 50' x 20'
702-03	CONCRETE COMBINED CURB & GUTTER	L.F.	400	\$15.00	\$6,000.00	Length of project, 1 side
712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	8	\$50.00	\$400.00	Every 50'
712-05.01	WARNING LIGHTS (TYPE A)	EACH	4	\$75.00	\$300.00	1/2 barrels
712-06	SIGNS (CONSTRUCTION)	S.F.	90	\$15.00	\$1,350.00	
712-08.06	UNIFORMED POLICE OFFICER	HOURL	160	\$80.00	\$12,800.00	4 weeks
716-02.01	PLASTIC PAVEMENT MARKING (4" LINE)	L.M.	0.08	\$2,700.00	\$216.00	Length of project
716-05.01	PAINTED PAVEMENT MARKING (4" LINE)	L.M.	0.08	\$1,000.00	\$80.00	Length of project, both sides of lane
	CONSTRUCTION ITEMS TOTAL				\$157,696.00	
	Construction Management/Engineering (27.4%)				\$43,208.70	
	Right of Way	S.F.	8000	\$5.00	\$40,000.00	Estimate 20' x 400'
	10' Temp. Construction Easement	S.F.	4000	\$2.00	\$8,000.00	Estimate 10' x 500'
	Contingency (20%)				\$49,780.94	
				<b>TOTAL</b>	<b>\$298,685.64</b>	

Cost estimate for widening of Old Lebanon Dirt Road

Old Lebanon Dirt Road widening				Created:	01/28/08	
Intersection with Chandler Road				Updated:	01/28/08	
Cost Estimate						
ITEM NO.	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE	Notes
203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED)	C. Y.	350	\$20.00	\$7,000.00	300', 14' lane, 2' deep
203-03	BORROW EXCAVATION (UNCLASSIFIED)	C. Y.	375	\$15.00	\$5,625.00	300' ditch 8'x4'
203-07	FURNISHING & SPREADING TOPSOIL	C. Y.	120	\$20.00	\$2,400.00	300' x 15', 4" thick, both sides
209-08.03	TEMPORARY SILT FENCE (WITHOUT BACKING)	L.F.	800	\$2.00	\$1,600.00	Length of project, both sides of lane
303-01	MINERAL AGGREGATE, TYPE A BASE, GRADING D	TON	275	\$20.00	\$5,500.00	10" x 300' x 14'
307-01.01	ASPHALT CONCRETE MIX (PG64-22) GRADING A	TON	125	\$80.00	\$10,000.00	4" x 300' x 14'
307-01.08	ASPHALT CONCRETE MIX (PG64-22) GRADING B-M2	TON	60	\$80.00	\$4,800.00	2" x 300' x 14'
402-01	BITUMINOUS MATERIAL FOR PRIME COAT (PC)	TON	1	\$500.00	\$500.00	Asphalt area = 14'x300' (Use 4,500)
402-02	AGGREGATE FOR COVER MATERIAL (PC)	TON	3	\$50.00	\$150.00	4500 SF
403-01	BITUMINOUS MATERIAL FOR TACK COAT (TC)	TON	1	\$400.00	\$400.00	Use 1 TON
403-02	ASPHALT CEMENT FOR TACK COAT (TC)	TON	1	\$400.00	\$400.00	Use 1 TON
411-01.01	ASPHALT CEMENT (PG64-22) (ACS) GRADING D	TON	12	\$300.00	\$3,600.00	1.5"x22000 SF
411-01.02	AGGREGATE (ACS) GRADING D	TON	200	\$50.00	\$10,000.00	1.5"x22000 SF
503-01.01	MILLING CONCRETE PAVEMENT	S. Y.	2000	\$30.00	\$60,000.00	
607-03.02	18" CONCRETE PIPE CULVERT (CLASS III)	L.F.	800	\$60.00	\$48,000.00	Length of project, both sides
611-12.01	CATCH BASINS	EACH	6	\$2,500.00	\$15,000.00	
712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	16	\$50.00	\$800.00	Every 50'
712-05.01	WARNING LIGHTS (TYPE A)	EACH	8	\$75.00	\$600.00	1/2 barrels
712-06	SIGNS (CONSTRUCTION)	S.F.	150	\$15.00	\$2,250.00	Similar to Stewarts Ferry
716-02.01	PLASTIC PAVEMENT MARKING (4" LINE)	L.M.	0.04	\$2,700.00	\$108.00	Length of project, both sides of lane
716-05.01	PAINTED PAVEMENT MARKING (4" LINE)	L.M.	0.04	\$1,000.00	\$40.00	Length of project, both sides of lane
CONSTRUCTION ITEMS TOTAL					\$178,773.00	
	10' Temp. Construction Easement, both sides	S.F.	4000	\$2.00	\$8,000.00	Estimate 10' x 400'

Cost estimate for Chandler Road resurfacing & marking

<b>Chandler Road Resurfacing</b>			<b>Created:</b>	<b>01/28/08</b>		
<b>Intersection with Old Lebanon Dirt Road</b>			<b>Updated:</b>	<b>01/28/08</b>		
<b>Cost Estimate</b>						
<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>EST. QTY.</b>	<b>UNIT PRICE</b>	<b>TOTAL PRICE</b>	<b>Notes</b>
411-01.01	ASPHALT CEMENT (PG64-22) (ACS) GRADING D	TON	7	\$300.00	\$2,100.00	1.5"x12000 SF
411-01.02	AGGREGATE (ACS) GRADING D	TON	100	\$50.00	\$5,000.00	1.5"x12000 SF
503-01.01	MILLING CONCRETE PAVEMENT	S.Y.	1400	\$30.00	\$42,000.00	
712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	10	\$50.00	\$500.00	Every 50'
712-05.01	WARNING LIGHTS (TYPE A)	EACH	5	\$75.00	\$375.00	1/2 barrels
712-06	SIGNS (CONSTRUCTION)	S.F.	90	\$15.00	\$1,350.00	
716-02.01	PLASTIC PAVEMENT MARKING (4" LINE)	L.M.	0.3	\$2,700.00	\$810.00	Length of project, 5 lines
716-05.01	PAINTED PAVEMENT MARKING (4" LINE)	L.M.	0.3	\$1,000.00	\$300.00	Length of project, 5 lines
	<b>CONSTRUCTION ITEMS TOTAL</b>				<b>\$52,435.00</b>	

Cost estimate for traffic signal reconstruction

ITEM NO.	DESCRIPTION	UNIT	Unit Price			Quantity	Cost
			Install Only	Equipment Only	Provide and Install		
730-02.07	LED SIGNAL HEAD ASSEMBLY (130)	EACH	\$50.00	\$511.00	\$561.00	11	\$6,171.00
730-02.13	LED SIGNAL HEAD ASSEMBLY (140 A1)	EACH	\$50.00	\$715.00	\$765.00	3	\$2,295.00
730-02.16	LED SIGNAL HEAD ASSEMBLY (150 A2H)	EACH	\$50.00	\$977.00	\$1,027.00	2	\$2,054.00
730-05.01	ELECTRICAL SERVICE CONNECTION	EACH	\$1,200.00	\$250.00	\$1,450.00	1	\$1,450.00
730-08.02	SIGNAL CABLE - 5 CONDUCTOR	L.F.	\$0.50	\$0.46	\$0.96	1000	\$960.00
730-08.04	SIGNAL CABLE - 9 CONDUCTOR	L.F.	\$0.50	\$0.90	\$1.40	2000	\$2,800.00
730-08.30	INTERCONNECT CABLE (COPPER-TWISTED PAIR)	L.F.	\$3.00	\$0.35	\$3.35	2500	\$8,375.00
730-11.01	STEEL CONDUIT RISER ASSEMBLY	EACH	\$150.00	\$100.00	\$250.00	1	\$250.00
730-12.13	CONDUIT 2" DIAMETER (JACK AND BORE)	L.F.	\$25.00	\$3.76	\$28.76	700	\$20,132.00
730-13.02	VEHICLE DETECTOR (VIDEO)	EACH	\$1,500.00	\$6,016.00	\$7,516.00	5	\$37,580.00
730-16.12	CONTROLLER (Ø - PHASE WITH TYPE IV CABINET)	EACH	\$2,500.00	\$7,981.00	\$10,481.00	1	\$10,481.00
730-23.31	PEDESTAL POLE	EACH	\$500.00	\$325.00	\$825.00	1	\$825.00
730-23.64	CANTILEVER SIGNAL SUPPORT (1 ARM @ 30')	EACH	\$2,600.00	\$10,400.00	\$13,000.00	3	\$39,000.00
730-23.80	CANTILEVER SIGNAL SUPPORT (1 ARM @ 40')	EACH	\$2,600.00	\$10,400.00	\$13,000.00	2	\$26,000.00
730-23.84	CANTILEVER SIGNAL SUPPORT (2 @ 40' & 30')	EACH	\$2,800.00	\$11,200.00	\$14,000.00	1	\$14,000.00
730-26.03	PEDESTRIAN SIGNAL HEAD (LED), PUSHBUTTON & 12" SIGN	EACH	\$200.00	\$369.00	\$569.00	2	\$1,138.00
					<b>Equipment Total</b>		<b>\$173,511</b>

Exhibit 14. Calculation of Value of Benefits

**Annual Value of Delay Savings**

			Andrew Jackson Pkwy		Chandler Road	Old Lebanon Dirt Road	Total
			NB	SB	SB	WB	
AM	Delay (sec)	Before	21.8	53.9	49.3	285.2	
		After	13.8	42.2	6.1	58.0	
	Reduction		8.0	11.7	43.2	227.2	
	Volume		590	810	480	290	
Savings (Hrs)		1.3	2.6	5.8	18.3	28.0	
PM	Delay	Before	192.4	37.6	55.8	61.4	
		After	21.7	31.6	49.3	60.5	
	Reduction		170.7	6.0	6.5	0.9	
	Volume		1530	700	210	240	
Savings (Hrs)		72.5	1.2	0.4	0.1	74.2	

The savings will occur during the morning peak hour and the two evening peak hours.

Annual Delay Savings = Daily Savings x 250 workdays

$$(28.0 + 74.2 + 74.2) * 250 = 44,078 \text{ hours}$$

The USDOT provides data for calculating the economic benefits of a reduction in delay. They recommend using a value of \$15.71 per hour during the rush hours.

Annual Savings = Annual Delay Savings \* user Cost of Delay

$$44,078 * \$15.71 = \$692,467.34$$

**Annual Value of Fuel Savings**

			Andrew Jackson Pkwy		Chandler Road	Old Lebanon Dirt Road	Total
			NB	SB	SB	WB	
AM	Fuel	Before	13	22	5	12	
		After	11	19	6	8	
	Reduction		2	3	-1	4	
PM	Delay	Before	89	15	5	7	
		After	33	14	5	7	
	Reduction		56	1	0	0	

The savings will occur during the morning peak hour and the two evening peak hours.

Annual Fuel Savings = Daily Savings x 250 workdays

$$(8 + 57 + 57) * 250 = 30,500.00 \text{ gallons}$$

Assuming a fuel cost of \$3 per gallon, this is an annual savings of \$91,500.00

**Total Annual Savings**

$$\$692,500 + \$91,500 = \mathbf{\$784,000.00}$$



## Exhibit 15. Peer Review

A Peer Review was conducted on February 20, 2008. The Peer Review Committee consisted of Jeff Campbell PE, John Gregor PE, and Walter (Chip) Knauf PE. The Committee identified some minor grammatical and spelling errors. All of these corrections and changes have been addressed in the final document. They also requested a number of additions and changes to the report. These were significant enough that the report was recirculated for peer review.

A second Peer Review Committee was convened on March 6, 2008. The Peer Review Committee consisted of Jeff Campbell PE, Billy Davis, John Gregor PE, and Walter (Chip) Knauf PE. The Committee identified some minor grammatical and spelling errors. All of these corrections and changes have been addressed in the final document.



***NDOT***

Appendix 2.A – Equity in Design Form

# Metro Nashville Transportation Plan

## Equity In Design

It is the Metro Nashville's intention to advance a people first transportation plan. During these challenging times plans, we are sharpening our aim toward a performance driven transportation system that is efficient, effective and accountable in planning, design and implementation is essential. Equity in our system performance is well supported by including equity in the design of each project that makes up the system.

The following questions, noting how the project design and implementation will support and be measured, creates that equity in design. If any question is not applicable (N/A), we must explain why.

### Accessibility

1. Are there schools in the vicinity? If so, which ones and how will this project improve mobility and accessibility?  
Click or tap here to enter text.
2. Improved access to health care?  
Click or tap here to enter text.
3. Improved access to educational facilities?  
Click or tap here to enter text.
4. Will wayfinding be incorporated to enhance visitor experience?  
Click or tap here to enter text.

### Populations of Varying Age

1. How are youth populations served?  
Click or tap here to enter text.
2. How are senior populations served?  
Click or tap here to enter text.

### Safety

1. How does the project design enhance security for all through lighting, median breaks or turnarounds or other measures as applicable? (Coordinate with APD)  
Click or tap here to enter text.
2. How does the project design serve land uses or economic development projects as noted in the City's Comprehensive Plan/City Transportation Plan or Invest Atlanta coordination?  
Click or tap here to enter text.
3. How is pedestrian movement and safety enhanced?  
Click or tap here to enter text.
4. How is cycle movement and safety enhanced?

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[Project Name]



Click or tap here to enter text.

## Connectivity

1. Are there special needs populations in the area and how will the project design accommodate those and enhance connectivity?  
Click or tap here to enter text.
2. Is there transit service in the area? How does the project enhance the connection?  
Click or tap here to enter text.
3. How are economically disadvantaged communities better connected to employment areas/centers?  
Click or tap here to enter text.
4. How is the network connectivity enhanced through the project?  
Click or tap here to enter text.

## Outreach

1. How will community outreach be adapted to innovatively reach all?  
Click or tap here to enter text.
2. Specific language access measures in outreach and design?  
Click or tap here to enter text.

## Environmental

1. How is stormwater management addressed? (Coordination with Dept of Watershed Management)  
Click or tap here to enter text.
2. How is sustainability specifically addressed? (Coordination with Office of Sustainability)  
Click or tap here to enter text.



**NDOT**

**Appendix 3.A – Solicitation Request Form**



**SOLICITATION REQUEST INFORMATION** *(Procurement Staff will be in Touch to Refine the Data)*

Solicitation Request Title:

Date of Request:

High Level Description of Request (1 sentence or **short** paragraph):

Example:

Request for office supplies contract. Supplies are to be ordered online and delivered to the departments. Departments placing orders are to be individually invoiced.

Is this replacing an existing contract? No If so, what is the Contract Number?

Contract Expiration Date:

Select from one of the following:

Select from one of the following:

Select from one of the following:

- Invitations to Bid (ITB) are awarded the lowest cost bidder, meeting specifications and scheduled delivery requirements. Awards are modified only by small business and/or service disabled veteran owned business inclusion as required by Code. ITBs cannot be negotiated, the bid is what the bid is and as a result this is the fastest solicitation process.
- Requests for Proposals (RFP) are awarded to the offeror with the highest total score for a predetermined and weighted evaluation criteria list. Cost is one of several evaluation criteria. Criteria beyond cost and SMWBE business participation are evaluated by an evaluation committee. The final offer can be negotiated and as a result, RFPs take longer than ITBs.

**PO/Contract Timelines** (Timeline below begins with the receipt of request in iProcurement and assignment within the Procurement Division – Highly dependent on full and accurate information being submitted by department).

- ITBs resulting in a PO are generally actionable within 45 days.
- ITBs resulting in a Contract are generally actionable within 90 days.
- RFPs for contracted services are generally actionable within 120 days.
- RFPs for A&E services are generally actionable within 150 days.
- RFPs for IT related contracts may exceed 150 days.

**REQUESTING DEPARTMENT'S INFORMATION**

Requesting Department:

Departmental Contact's Name (Project Manager):

Email: Phone:

Estimated Contract/Budget Amount (include cost breakdown for EBO):

Project Contract Life:

Is this Grant Funded? No Grant Commitment Date:

**Note: Please attach a copy of the grant to the requisition**

**ALLOWANCES AND/OR CONTINGENCIES** *(Construction Projects Only)*

**Allowance Definition:** A specific amount determined by the department for specific item of work (i.e. permits, unsuitable soil) to performed as part of the construction phase.

**Contingency Definition:** A specific amount determined by the department for unknown or unforeseen items that may take place within the construction phase.

Does this project include allowances? **Select One:** If yes, provide the allowance details:

Does this project include contingencies? **Select One:** If yes, provide the contingency details:

## EQUAL BUSINESS OPPORTUNITY (EBO) PROGRAM

The Equal Business Opportunity Program (EBO) went live on July 5, 2019. The EBO Program establishes subcontracting participation goals for Minority Business Enterprises (MBE) and Women Business Enterprises (WBE). The EBO Program Scope and Applicability includes the following categories:

1. Construction: Includes any and all horizontal and vertical construction, including new construction rehabilitations, remodeling and repairs.
2. Non-professional Services: Encompasses the procurement of advertising, printing, non-construction repairs and maintenance, janitorial services, training seminars and workshops, computer and information systems, security, shipping and mailing, microfiche and microfilm, courier, storage, travel, consulting and other non-professional services.
3. Professional Services: Professional Services: Includes the purchase of any or all services covered by Section 4.08.080 for which applicable selection criteria may require a Participant to possess a license or other certificate of competency such as accounting, auditing, architectural, and engineering.
4. Goods: Any and all products, supplies, equipment or commodities.
  - a. This only applies to Aspirational Goals. There is no contract/project Goals.

In an effort to have accuracy in our goal setting please provide a cost breakdown of the work elements in the EBO Cost Breakdown Spreadsheet which your department used in determining the budget for this solicitation. The EBO Cost Breakdown Spreadsheet can be found at <http://im.nashville.org/finance/procurement/r12.asp>. After a review of this information by the BAO Director and Procurement Data Officer; the goal will be sent to the Goal Setting Committee consisting of the Purchasing Agent, BAO Director, and Department Head.

## SPECIFICATIONS (Specifications are required for an ITB – optional for RFP)

If this request is for specific product(s), please provide the specifications below:

### Definition:

- The description or identification of some product in a precise manner. It is preferable to express it in a measurable way since substitutions must be considered when a product line or model is provided. State clearly the objective of the product if measurable specifications are not available.

### Examples for Ergonomic Chair & for Paint:

- Super Patriot 5600 with sliding seat adjustment. JR-70 Armrest
- BC 44 Multifunction with BJR-2 T armrest and sliding seat
- Or Metro Approved Equal for Substitution
  
- Room is to be painted in Sherwin Williams #347, eggshell finish – supplier walk through required prior to bid. See bid for dates and times.

Or see the attached Specifications file named (optional):

## MINIMUM REQUIREMENTS (optional – standard on IT related solicitations)

Provide any minimum requirements for this request (optional):

### Definition:

- This is not always necessary but it is the lowest level of acceptance that can be considered. Any offer not satisfying the minimum requirement will not be considered. So be careful painting yourself into a corner!
- *Caution: Unless functionally necessary, maximum competition is required by law.*

Example:

1. No less than 15 pounds.
2. No longer than 30 feet.
3. Must be compatible with ESRI.

Or see the attached Minimum Requirements file named (optional):

## SCOPE OF WORK (SOW is **required** for RFP – optional for ITB)

Provide a scope of work for this request:

### Definition:

- The work to be performed under this procurement in the completion of a project or service. Identify if it will be restricted to what is being solicited or if the solicitation is only representative of the work to be performed under this contract. The SOW is typically broken out into 1) specific tasks, 2) deadlines and 3) approvals.

### Example of an IT SOW:

Selected firm will provide end-to-end mobile application development services in a collaborative environment to meet the business objectives of Metro. The application should be interactive, easy to use and meet Metro's IT security requirements. This is a project specific engagement. Offeror will gather the requirements, analyze, design, develop, implement, test and integrate the application according to the guidelines and schedules stated in the RFP. Provide a detailed list of deliverables, processes involved, end products, review and approval process etc.

Offeror will deliver the project to Metro by June 1, 2019, providing weekly status reports and project updates. Define the task/ project start and finish dates, timelines for different phases of the project and the various milestones.

Metro will review and validate planned implementation processes, approve process after testing, and sign-off on all milestones prior to acceptance of deliverables.

Or see the attached Scope of Work file named (optional):

## FUNCTIONAL REQUIREMENTS (optional)

Provide any functional requirements for this request (optional):

**Definition:**

- A functional requirement defines a function of a product/system and its components. A function is described as a set of inputs, the behavior, and outputs (results).

**Example:**

- Display the name, total size, available space and format of a flash drive connected to the USB port. Other examples are: add customer and print invoice.

**Typical Functional Requirements Include:**

- Business Rules
- Transaction corrections, adjustments and cancellations
- Administrative functions
- Authentication
- Authorization levels
- Audit Tracking
- External Interfaces
- Reporting Requirements

Or see the attached Functional Requirements file named (optional):

## QUALIFICATIONS REQUIREMENTS (optional)

Provide any qualifications requirements for this request (optional):

**Definition:**

- A specific skill, type of experience, knowledge, license or certification that makes a supplier qualified to perform the work being sought through this business engagement.

**Example:**

1. Offeror must be an active CPA with 3 years of experience servicing municipalities no less than a 550,000 population.
2. Offeror must have been an active participant in the implementation of the software being proposed.

Or see the attached Qualifications Requirements file named (optional):

Are background checks required for those performing the services onsite (optional)? **Select One:**

If so, what staff must have background checks (optional)?

Type of Background check required (optional):

## DELIVERY INFORMATION (optional)

Provide any delivery requirements for this request (optional):

**Example:**

- Must be delivered / serviced between 8:00 AM and 3:30 PM on regular workdays, or.
- May only be performed after 5:00 PM or on weekends but all work must be completed by 4:00 AM and area cleaned.
- All contract deliverables must be provided and approved by May 5<sup>th</sup>.
- Inside delivery – No dock provided – Performed by supplier or shipper, supplier prepaid freight.

Or see the attached delivery information file named (optional):

## SENSITIVE INFORMATION

### Definition:

- Sensitive Information is defined as any information classified as "Confidential" or "Restrictive" as defined by the Metropolitan Government Information Classification Policy (see <http://www.nashville.gov/Information-Technology-Services/Information-Security/Information-Security-Policies.aspx>). The classification of the data that a Contractor is given access to should be determined by and communicated to the Contractor by the requesting department.

Please indicate if a Contractor will be providing a service or solution that will be used to collect, store, process and/or have any access to any information classified as "Sensitive" by the department. Examples of Sensitive information can be found below. Please check any applicable boxes to the scope of work/services.

- Social Security Numbers
- Protected health information, including medical records of patients
- Credit card numbers and any related personal identification numbers or authorization codes
- Records of students in public educational institutions
- Investigative reports
- Criminal Justice and/ or Criminal History Record Information
- Attorney/client privilege
- Bank account information, including routing and account numbers
- Standard Operating Procedures including, but not limited to:
  - All riot, escape and emergency transport plans
  - All contingency plans of a governmental entity prepared to respond to or prevent any violent incident, bomb threat, ongoing act of violence at a school or business, ongoing act of violence at a place of public gathering, threat involving a weapon of mass destruction, or terrorist incident.
- Information that could be used to disrupt, interfere with, or gain unauthorized access to electronic information or government property.
- Residential street address, home telephone and personal cell phone numbers of public employees
- Proposals received in response to a request for service prior to the completion of evaluation for service
- Information that would allow a person to obtain unauthorized access to confidential information or to government property
- Plans, security codes, passwords, combinations, or computer programs used to protect electronic information and government property
- Information that would identify those areas of structural or operational vulnerability that would permit unlawful disruption to, or interference with, the services provided by a governmental entity
- Information and records that are directly related to the security of any government building, including, but not limited to,
  - Information and records about alarm and security systems used at the government building
- Security plans, including security-related contingency planning and emergency response plans
- Blueprints and information about building infrastructure (water, electrical, network, etc.)
- OTHER \_\_\_\_\_
- Will Contractor provide, license, or sell software or computer related hardware that will reside on systems, workstations, or devices on the Metro Government network or as a component of the Metro Government IT Infrastructure?
- None of the above apply.

### ITS RELATED OR INVOLVED SCOPES ONLY:

Has ITS reviewed this scope or have you been in contact with ITS about this requests? **Select One:**

If Yes, provide the name of the individual from ITS:



**MULTIPLE DEPARTMENT USE OF CONTRACT**

Unless the contract states otherwise, all contracts are Metro-wide. What other departments do you think might use this contract (optional)?

,  
,

**CRITICAL SUPPLIERS TO SEND SOLICITATION**

Solicitations are sent to all registered suppliers for this product/service. Are there critical suppliers to whom this solicitation should be directed?

,  
,

**RFP EVALUATION CRITERIA** (information will not be used for ITB)

If the evaluation criteria are known, attach as a separate document to the requisition. Below are examples of information you might want to see in a proposal. Check any that you believe are important and then provide detail for what should be considered under that heading. Procurement Staff will discuss directing with the identified Project Manager while drafting the solicitation.

- Quality Issues**
- Supplier Qualification Requirements**
- Supplier Experience Requirements**
- Scheduling Expectations**
- Potential Risks**
- Other Important Issues**

Or see the attached evaluation criteria file named (optional):  
Procurement Staff assigned to this solicitation will be in touch to refine the solicitation data.

**RECOMMENDED EVALUTION COMMITTEE OR REVIEW BOARD MEMBERS**

Provide the recommended members that serve on the evaluation committee or review board.

Full Name	Representing Dept	Scorer/Resource?
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Or see the attached Recommended Evaluation Committee file named (optional):



**NDOT**

Appendix 3.B – EBO Cost Breakdown

APPENDIX 3.B - EBO Cost Breakdown Spreadsheet

TO BE COMPLETED BY THE REQUESTING DEPARTMENT			FOR BAO USE ONLY																		
Work Item/Commodity Code	Estimated Value (\$)	Notes (Optional)	Available MBE	Available WBE	Total Available Firms	WBE% Per Work Item	MBE% Per Work Item	MBE \$ Amount Per Work item	WBE \$ Amount Per Work item	Total MBE%	Total WBE%						Available SBE	SBE% Per Work Item	SBE \$ Amount Per Work item	Total SBE%	
<b>Totals</b>	\$ -						0%	0%	\$ -	\$ -	0%	0%						0%	\$ -	0%	

## OFFICE OF MINORITY AND WOMEN BUSINESS ASSISTANCE (BAO)

Lindsley Hall  
730 2<sup>nd</sup> Avenue South 1<sup>st</sup> Floor  
Nashville, TN 37219

The Equal Business Opportunity Program (EBO) went live on July 5, 2019. The EBO Program establishes subcontracting participation goals for Minority Business Enterprises (MBE) and Women Business Enterprises (WBE). The EBO Program Scope and Applicability includes the following categories:

1. Construction: Includes any and all horizontal and vertical construction, including new construction rehabilitations, remodeling and repairs.
2. Non-professional Services: Encompasses the procurement of advertising, printing, non-construction repairs and maintenance, janitorial services, training seminars and workshops, computer and information systems, security, shipping and mailing, microfiche and microfilm, courier, storage, travel, consulting and other non-professional services.
3. Professional Services: Professional Services: Includes the purchase of any or all services covered by Section 4.08.080 for which applicable selection criteria may require a Participant to possess a license or other certificate of competency such as accounting, auditing, architectural, and engineering.
4. Goods: Any and all products, supplies, equipment or commodities.
  - a. This only applies to Aspirational Goals. **There is no contract/project Goals.**

In an effort to have accuracy in our goal setting please use the **Solicitation Work Item Request** tab to provide a cost breakdown of the work elements which your department used in determining the budget for this solicitation.

After a review of this information by the BAO Director and Procurement Data Officer; the goal will be sent to the Goal Setting Committee consisting of the Purchasing Agent, BAO Director, and Department Head.

### **The EBO Cost Breakdown Sheet has three sections that a Project Manager needs to complete.**

#### **Column A: Work Item/Commodity Code**

- List work items that include all aspects of your project.
- Separate goods and services if it makes sense for your project.
- You may search for the Commodity Code/UNSPSC via this link: <https://www.unspsc.org/>.
  - Ensure you select a commodity code that **best describes** your work item, and is as detailed as possible. Avoid utilizing generic codes as much as possible, though sometimes finding a good fit can be difficult depending on the work.

#### **Column B: Estimated Value (\$)**

- Base estimated values off your budget.
- Accuracy here effects the dollars connected to MBE and WBE goals.

#### **Column C: Notes (Optional)**

- Though they are optional, please include notes for your work items to help the PDO get a better understanding of your project! Especially for more complex or unique projects and work items.



**NDOT**

**Appendix 3.C – TDOT LPDO Work Order Assignment Evaluation Form**



<b>Contractee:</b> _____	<b>PIN:</b> _____	<b>Federal No.:</b> _____
<b>Term:</b> _____		<b>State No.:</b> _____
_____		<b>County:</b> _____
_____		

**Select the Type of Project (check all that apply) :**

<input type="checkbox"/> Bike Infrastructure	<input type="checkbox"/> Bridge	<input type="checkbox"/> Intersection
<input type="checkbox"/> ITS/Technology	<input type="checkbox"/> Non-Traditional	<input type="checkbox"/> Greenway/Multiuse Path
<input type="checkbox"/> Resurfacing	<input type="checkbox"/> SIA	<input type="checkbox"/> Other (describe below) : _____
<input type="checkbox"/> Sidewalk	<input type="checkbox"/> Signalization	

**Selection Criteria (please provide a short description) :**

**1. Capability/Availability of Staff**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**2. Desired Qualifications/Area of Expertise**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**3. History of Work on Similar Projects**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Work Order Type:**

<input type="checkbox"/> NEPA	<input type="checkbox"/> Preliminary/Final Design	<input type="checkbox"/> CEI
<input type="checkbox"/> Other: _____		

**Firm Desired:**

<input type="checkbox"/> AECOM	<input type="checkbox"/> ARCADIS	<input type="checkbox"/> Barge Design
<input type="checkbox"/> Alfred Benesch	<input type="checkbox"/> Kimley-Horn	<input type="checkbox"/> Mattern & Craig

**Reviewer Information:**

Name: \_\_\_\_\_

Organization: \_\_\_\_\_

Role In Project: \_\_\_\_\_



**NDOT**

Appendix 3.D – TDOT Deposit Request Letter



**STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
PROGRAM DEVELOPMENT & ADMINISTRATION DIVISION  
LOCAL PROGRAMS DEVELOPMENT OFFICE**  
SUITE 600, JAMES K. POLK BUILDING  
505 DEADERICK STREET  
NASHVILLE, TN 37243-1402  
(615) 741-5314

**CLAY BRIGHT**  
COMMISSIONER

**BILL LEE**  
GOVERNOR

March 23, 2021

The Honorable John Cooper  
Mayor, Nashville  
1 Public Sq  
Nashville, TN 37201

Re: SR-11 (Nolensville Pike), From McNally Drive to Natchez Court  
Nashville, Davidson County  
PIN:128602.00  
Federal Project Number: N/A  
State Project Number: 19LPLM-S0-155  
Contract Number: 190024

Dear Mayor Cooper:

This letter serves as a deposit request for the above referenced project for the environmental/preliminary engineering, design, and ROW. This is due to your agency requesting to use the TDOT Local Programs Development Office's on-call list for the development of your project. The total estimated cost for your agency's share of the environmental/preliminary engineering, design, and ROW is \$24,897.71. Please note that only \$2,539.00 for the environmental/preliminary engineering phase is due at this time. Keep in mind, this does not change your contract terms with us. The responsibility and match requirements as detailed in the contract are still applicable.

The deposit may be made either by check delivered to Matt Burcham in the Local Programs Development Office at the address listed above or by an electronic funds transfer into a Local Government Investment Pool (LGIP) account. To deposit funds into your LGIP account, please follow the attached instructions.

If you have any questions or need any additional information, please contact Katie Brown at 615-253-2421 or [katie.brown@tn.gov](mailto:katie.brown@tn.gov).

Sincerely,

A handwritten signature in cursive script that reads "Kimery Grant".

Kimery Grant  
Transportation Manager

Attachments

Ecc: Kimery Grant  
Matt Burcham  
Neil Hansen  
Jason Radinger  
Katrina Jones  
E-file

**C O N T R A C T**

**THIS AGREEMENT**, made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between **THE TREASURY DEPARTMENT OF THE STATE OF TENNESSEE**, hereinafter referred to as the "Treasury", and \_\_\_\_\_, Tennessee, hereinafter referred to as the "Local Agency".

**W I T N E S S E T H:**

**WHEREAS**, the State of Tennessee, acting through the Department of Transportation, entered into a contract with the \_\_\_\_\_, hereinafter called "Local Agency", on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, relative to providing for implementation of \_\_\_\_\_;

**WHEREAS**, said agreement provides that the Local Agency may deposit its pro rata share of the estimated cost of the project with the Treasury for temporary investment as an alternative to furnishing the Department with said share, and the Local Agency has elected to use said alternate; and

**WHEREAS**, the Local Agency has made application to participate in the Local Government Investment Pool which has been accepted by the Treasury and has deposited its pro rata share of the estimated cost of the project by immediate credit transfer and advised the Treasury thereof and identified the account to which said deposit should be credited.

**NOW THEREFORE**, in consideration of the premises, the Treasury and the Local Agency agree as follows:

The Local Agency hereby authorizes Treasury to transfer from its Local Government Investment Pool Account (LGIP Account) relative to the above- identified project, to the account of the Department of Transportation, such amounts as said Department may request from time to time by written instructions from its Finance Director, without liability.

The Local Agency understands that no funds in its LGIP account shall be subject to withdrawal until the project is completed and the actual pro rata share of cost is determined. On completion, any surplus will be returned to the Local Agency pursuant to written instructions of said Department with an accounting of transfers made.

The Treasury will credit interest to the account which will be added to the principal and will become part of the surplus, if any, for disposition by said Department at the completion of the project. LGIP account statements will be sent to the Local Agency and said Department monthly. There will be an administrative fee charged to the Local Agency for the LGIP account at the same rate as other LGIP accounts are charged.

It is understood by the parties that the Treasury shall be responsible for the investment of aforesaid sum in accordance with the terms and conditions of the administration of the pool.

**IN WITNESS WHEREOF**, the parties have caused this instrument to be executed by their duly authorized officials as of the date above written.

**STATE OF TENNESSEE**



**TREASURY DEPARTMENT**

By: \_\_\_\_\_

NAME OF OFFICIAL WHOSE  
SIGNATURE APPEARS BELOW

\_\_\_\_\_  
(Type or Print)

TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

\_\_\_\_\_

TELEPHONE NO: \_\_\_\_\_

COUNTY OF: \_\_\_\_\_

SIGNATURE  
OF OFFICIAL: \_\_\_\_\_

INSTRUCTIONS FOR DEPOSITING FUNDS  
FOR INVESTMENT IN LOCAL GOVERNMENT INVESTMENT POOL

Enclosed herewith you will find one (1) copy of a contract relative to investing in the Local Government Investment Pool (LGIP) administered by the State Treasury Department. These are for your use in providing evidence that the Local Agency's pro-rata share of funds for the amount set forth in the project agreement relative to the project identified in the contract have been deposited for the use of the Department of Transportation. After completing the information necessary in the body of the contract you will need to have a total of four (4) original copies signed by an authorized official. Due to the sophistication of today's copiers, signatures in ink of a color other than black will clearly mark them as original signatures and prevent possible delays. Mail two (2) copies to, Assistant Director of Investment Department, P. O. Box 198785, Nashville, TN., 37219-8785, and one (1) copy to Jennifer Herstek, Finance Administrator, Tennessee Department of Transportation, 800 James K. Polk Building, Nashville, TN 37243-0329. The remaining copy is to be retained for your file until a fully executed copy is returned by the Treasury Department. Any questions you have should be directed to **Assistant Cash Manager for LGIP Administration at (615) 532-1163**.

Please note that due to the volume of deposits, the Treasury Department will not confirm to TDOT that your deposit has been made more than once a month. To prevent delays in project development, once you have made the deposit, call the person who signed the letter transmitting this document. Give that person the account number to which you have made your deposit, the amount of your deposit and the date on which you submitted it.



**NDOT**

## Appendix 3.E – Consultant Performance Evaluation

(This Section reserved for a future update.)



***NDOT***

Appendix 5.A – Example Metro Invoice Template and Instructions

**Metropolitan Government of Nashville and Davidson County**

<b>Department:</b>		<b>Public Works</b>			<b>FORM A</b>	
<b>INVOICE FOR REIMBURSEMENT</b>		Metro Vendor #		123456		
<b>Contractor:</b>	Prime Contractor Inc.	<b>Project :</b>	Program Services			
<b>Contractor Address</b>	78 Main Street	<b>Contract No.:</b>	405583	<b>Period</b>		
<b>City, State, Zip</b>	Santa Claus, IN 47579	<b>P.O. No.:</b>	6467762	From		
<b>Contractor Invoice Number</b>		<b>Invoice No.:</b>		To		
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	
<b>Task / Cost Category</b>	<b>Total Contract/P.O. Budget</b>	<b>Actual Expenditures</b>			<b>Remaining Contract/P.O. Budget Balance</b>	
		<b>Previously billed</b>	<b>Actual Expenditures THIS INVOICE</b>	<b>Inception -To Date</b>		
1- Technical Services and Documentation	\$ 110,500.00		\$ -	\$ -	\$ 110,500.00	
2-			\$ -	\$ -	\$ -	
Prime Contractor - Other			\$ -	\$ -	\$ -	
Sub-Contractor 1: (Task X)			\$ -	\$ -	\$ -	
Sub-Contractor 2: (Task X)			\$ -	\$ -	\$ -	
Sub-Contractor 3: (Task X)			\$ -	\$ -	\$ -	
Sub-Contractor 4: (Task X)			\$ -	\$ -	\$ -	
Sub-Contractor 5: (Task X)			\$ -	\$ -	\$ -	
Sub-Contractor 6: (Task X)			\$ -	\$ -	\$ -	
Sub-Contractor 7 (Task 2 Surveys)	\$ 7,000.00		\$ -	\$ -	\$ 7,000.00	
Sub-Contractor 1 - Other			\$ -	\$ -	\$ -	
Sub-Contractor 2 - Other			\$ -	\$ -	\$ -	
Sub-Contractor 3 - Other			\$ -	\$ -	\$ -	
Sub-Contractor 4 - Other			\$ -	\$ -	\$ -	
Sub-Contractor 5 - Other			\$ -	\$ -	\$ -	
Sub-Contractor 6 - Other			\$ -	\$ -	\$ -	
Sub-Contractor 7 - Other			\$ -	\$ -	\$ -	
	\$ -		\$ -	\$ -	\$ -	
<b>TOTAL</b>	\$ 117,500.00	\$ -	\$ -	\$ -	\$ 117,500.00	

**TOTAL PAYMENT DUE**

\$ -

I certify to the best of my knowledge and belief that the data above are correct and that all expenditures were made in accordance with the contract and that payment is due and has not been previously requested

I have reviewed this invoice and hereby certify that it is consistent with the contract provisions and the expected performance on the project

<b>Contractor Authorized Signature</b>	
Signature	
Name/Title	
Date	

<b>Metro Authorized Certification</b>	
Signature	
Name/Title	
Date	











This page is reserved to attach the signed and approved Summary Page in PDF format to this invoice.  
See invoice instructions on how to attach it.



Contracted Tasks	Approved Rates/Not to Exceed	
1-Technical Services and Documentation		
2-Administrative		
3-Surveys and Polling		
4-Public Coordination		
5-Program Development		
Total contract	\$	8,000,000.00

Proposal 1	Approved Rates/Not to Exceed	
1-Technical Services and Documentation	\$	110,500.00
2-Surveys	\$	7,000.00
Not to Exceed	\$	117,500.00

Proposal 2	Approved Rates/Not to Exceed	
Not to Exceed	\$	-

Prime Contractor

Job Classification	Rate
Principal	\$257.50
Principal 1	\$231.75
Senior Project Manager	\$154.50
Principal Planner	\$144.20
Principal Professional Engineer	\$144.20
Senior Professional Engineer	\$123.60
Professional Engineer	\$108.15
Senior Engineering Intern	\$103.00
Engineering Intern	\$82.40
Planner 1	\$77.25
GIS/IT Analyst	\$87.55
GIS/IT Manager	\$103.00
Engineering Technician III	\$80.34
Engineering Technician II	\$69.01
Engineering Technician I	\$61.80
Administrative	\$74.16
Engineering Aide	\$51.50

SubContractor 1

Job Classification	Rate
Principal	\$200.85
Senior Project Manager	\$154.50
Senior Project Engineer	\$123.60
Senior Landscape Architect	\$123.60
Project Manager	\$123.60
Project Engineer	\$103.00
GIS/IT Manager	\$103.00
Design Engineer	\$103.00
IT/GIS Analyst	\$87.55
Survey Manager	\$86.52
Construction Manager	\$92.70
Senior Inspector	\$77.25
Surveyor Technician	\$75.19
Jr. Landscape Architect	\$74.68
Engineer In Training	\$74.68
CAD Technician	\$74.68
Finals Records Clerk	\$74.68
Inspector	\$66.95
Engineering Tech 1	\$57.68

Administrative Specialist	\$51.50
Seasonal Intern	\$36.05

SubContractor 2

Job Classification	Rate
Project Manager	\$154.98
Project Engineer	\$101.65
Engineer	\$65.62
CADD Technician	\$48.56

SubContractor 3

Job Classification	Rate
Principal	\$231.75
Communications Specialist	\$206.00
Marketing/Public Involvement Specialis	\$180.25

SubContractor 4

Job Classification	Rate
Project Manager	\$123.60
Survey Manager	\$86.52
Surveyor Technician	\$75.19

SubContractor 5

Job Classification	Rate
Principal	\$250.00
Principal	\$225.00
Principal	\$195.00
Senior Project Manager	\$150.00

SubContractor 6

Job Classification	Rate
Principal	\$250.00
Senior Project Manager	\$150.00
Principal Planner	\$140.00
Senior Landscape Architect	\$120.00
Engineering Technician 3	\$78.00
Administrative	\$72.00

SubContractor 7

Job Classification	Rate
Senior Project Manager	\$154.50
Project Engineer	\$101.65
GIS/IT Analyst	\$87.55
Inspector	\$66.95
CADD Technician	\$48.56

**Invoice Numbers**

405583-6467762-001  
405583-6467762-002  
405583-6467762-003  
405583-6467762-004  
405583-6467762-005  
405583-6467762-006  
405583-6467762-007  
405583-6467762-008  
405583-6467762-009  
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405583-6467762-040  
405583-6467762-041  
405583-6467762-042  
405583-6467762-043  
405583-6467762-044  
405583-6467762-045  
405583-6467762-046  
405583-6467762-047

**Metropolitan Government of Nashville**  
**Department of Public Works**  
**Metro Staff Instructions for Completing New Uniform Invoicing Format for Architectural and**  
**Engineering Contract Billings**

**SUMMARY PAGE TAB [FORM A]**

Beginning at the top of the ‘Summary Page’ tab [Form A], enter the department “Public Works”. Next, complete the fields designated for Contractor information: Contractor, Contractor Address, City, State, and Zip. Enter the Metro vendor #, name of the project, contract number and purchase order (PO) number in the designated fields on the upper right of the form.

After completing the items above, enter the itemized tasks listed within the contract in column A labeled “Task / Cost Category” for the primary contractor [i.e. **1 - Program and Project Management (P&PM), 2 – Project Inspection (PI)**]. Also enter a “Prime Contractor – Other” category for any additional tasks not specified. Below the primary tasks, list each sub-contractor and the task they will complete as a separate category [i.e. **Sub-Contractor CNT – Task 2**]. Also enter a “Sub-Contractor – Other” category for any additional tasks not specified.

In column B labeled “Total Contract/P.O. Budget”, enter contract and/or not to exceed amounts from the POs for each task.

**TASKS TAB**

Copy the primary tasks and contract amounts from the ‘Summary Page’ tab [Form A] and paste into the designated area in the ‘Tasks’ tab. For any additional proposals that have been approved, you will also enter those tasks and corresponding amounts on the ‘Tasks’ tab.

**RATES TAB**

Select the ‘Rates’ tab to enter detail. Type in the name of the Prime Contractor where indicated. Enter all job classifications associated with the prime contractor for the project and the current corresponding rates charged for each as per the contract. Below the prime contractor positions, enter sub-contractor names, job classifications and hourly billing rates for all sub-contractors hired by the prime contractor.

**INVOICE NUMBER TAB**

Click on the ‘Invoice Number’ tab to create invoice numbers in the new format prescribed by Metro. The invoice number should be a combination of the contract number, PO number as assigned by Metro and the sequential number beginning with ‘001’ [i.e. **363266-429367-001**]. In the left column, type the new invoice numbers to be used for the project. Copy the invoice sequence down the column to invoice 100. This is the list from which the vendor will select the appropriate invoice number.

**PRIME TASK TAB [FORM B]**

For each task listed on the ‘Summary Page’ tab [Form A] for prime contractors, a separate ‘Prime Task # -’ [Form B] must be created [i.e. **Prime Task 1 – P&PM, Prime Task 2 – PI**]. Beginning at the top of Form B, click on the “Task” field. Using the arrow to the right, display the drop-down list then select a task number/description for the form. Complete this process for each of the prime contractor tasks. Each task the primary contractor will perform on a PO should be on a separate tab.



### **SUB – TASK TAB [FORM C]**

For each task listed on the ‘Summary Page’ tab [Form A] for sub-contractors, a separate ‘Sub # - Task X’ [Form C] must be created [i.e. **Sub 1 – Task 2 PI**]. Beginning at the top of Form C, click on the “Task” field. Using the arrow to the right, display the drop-down list then select a task number/description for the form. Next, enter the name of the sub-contractor. Complete this process for each of the sub-contractor tasks. Each task the sub-contractor will perform on a PO should be on a separate tab.

### **PRIME – OTHER AND SUB – OTHER TABS**

There should be one ‘Prime – Other’ available for your primary contractor. There should also be a separate ‘Sub – Other’ tab for each sub-contractor.

### **REVIEW PROCESS**

The fields and column titles highlighted in green are to be completed by the prime contractor. All other fields should populate or calculate automatically. After set up has been completed for the initial forms, please submit for review via email to Katrina Jones, Sharon Wahlstrom, Kristin Kumrow and Amy Schuler. The forms will be reviewed for accuracy and edit protection will be applied to designated areas. After the review is completed successfully, the forms will be returned to you for forwarding to the primary contractor.

### **SIGNATURE PAGE**

Upon completion by the primary contractor, the forms should be returned to you for review and verification. If the forms have been completed appropriately and meet with your approval, authorized signatures must be obtained. Print the ‘Summary Page’ tab to .pdf format and send to the primary contractor for digital or physical signature(s) in the designated area. After the primary contractor signatures are obtained, the document must be returned to you for Metro Public Works signature(s). Obtain the appropriate Metro Public Works digital or physical signature(s) in the designated area.

After all authorized signatures have been obtained, insert the signed document into the ‘Signature Page’ tab. If the document has been physically signed, you will first need to scan the document to .pdf. On the ‘Signature Page’ tab, click on cell A1 in the top left corner of the page. From the menu across the top of the screen, select **Insert > Object**. In the pop-up box, select the **Create from File** tab. Click **Browse** and navigate to the appropriate .pdf file from the list. Select the correct filename, click **Insert**, and then click **OK**.

### **INVOICE REVISIONS OR ADDITIONS**

If you need revisions to your forms, such as additional tabs, lines or tables, or you need general assistance with completing the forms, please contact Katrina Jones, Sharon Wahlstrom, Kristin Kumrow or Amy Schuler.



**NDOT**

Appendix 5.B – Sample Survey Notification Letter



**METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY**

**JOHN COOPER**  
MAYOR

**NASHVILLE DEPARTMENT OF TRANSPORTATION  
AND MULTIMODAL INFRASTRUCTURE**

Month \_\_, 20XX

John Doe  
123 Metro Road  
City, TN 37XXX

Re: **Survey Notification for**  
**PROJECT:** Metro Road Improvement  
**PROJECT NO:** 20XX-R-X

Dear Mr./Ms. Doe:

As you may be aware, Nashville Department of Transportation and Multimodal Infrastructure (NDOT) is continuing the public involvement process for the above referenced project, and we want to alert you about activities you may be seeing shortly in your neighborhood.

In order to insure that we have accurate, complete and current information possible, NDOT has hired [Consultant Firm Name] to perform surveys of the project. Survey crews will begin gathering data to supplement existing aerial photographs of the area. This will involve ground surveys, which will investigate property lines, underground utilities, detailed stream information, environmental surveys, and more. Drones may be used to collect some of this data.

These ground surveys will begin withing the next one (1) to four (4) weeks and will continue for \_\_ to \_\_ months.

In order to gather the necessary information, the survey crews may need to gain access to your property located on this project. Your cooperation and patience in this effort will be greatly appreciated. The surveyors will attempt to contact you personally prior to entering your property. If there are specific times during the work week we should avoid, please let us know. Surveys will not be required on all properties.

It is NDOTs' intent to minimize any inconvenience to you through this process. Should you have any specific questions, please feel free to contact me at (o) 615-862-XXXX; (c) 615-XXX-XXXX, or by email at [darrell.moore@nashville.gov](mailto:darrell.moore@nashville.gov). We thank you in advance for your cooperation.

Sincerely,

Darrell K. Moore  
Project Manager



***NDOT***

**Appendix 6.A – Concept Report**

# PROJECT CONCEPT REPORT

NDOT Project #	
Project Name	
Federal Route #	
State Route #	

**REVIEWED & RECOMMENDED FOR APPROVAL BY:**

Print Name: _____ Title: Design Lead/Project Manager, Consultant Firm Date: _____	Print Name: _____ Title: Project Manager Date: _____
---	--

Print Name: _____ Title: Traffic Operations Manager Date: _____	Print Name: _____ Title: Division Manager Date: _____
---	---

**APPROVED BY:**

Print Name: _____ Title: Transportation Planning Manager	Date _____
---	------------

Print Name: _____ Title: Chief Engineer	Date _____
--	------------

Print Name: _____ Title: Director or Deputy Director (as applicable)	Date _____
---	------------



## PROJECT LOCATION

*Include a project location map sufficient to clearly locate the project and its beginning and ending point.*



## BACKGROUND DATA

### Project Justification (Need and Purpose):

**Existing conditions:** *A brief general description of the project location as it currently is, including lanes, sidewalks, signals, pedestrian signals, bike lanes, major intersections, structures, major utilities, and etc. in project area.*

**Description of the proposed project:** *A brief description of the proposed improvements including project limits, lanes, sidewalks, etc. and how the proposed improvements addresses the need.*

RTP #: (if applicable)

MPO TIP #: (if applicable)

CIB Project #:

Council District(s): ##

Zone #:

Congressional District(s): ##

Other projects in the area:

School(s) within project limits:

Road on School Bus Route:  No /  Yes

WeGo Route:  No /  Yes

Railroad crossing(s) in the area:

Elevated: \_\_\_\_

At Grade: \_\_\_\_ Crossing ID #:

Location:

Bridge(s) within project limits:

Bridge ID #:

Last Inspection Date:

Greenway or Park Connection:

Projected Traffic: *ADT or AADT* 24 HR T: \_\_\_\_%

Current Year (20WW): \_\_\_\_ Open Year (20XX): \_\_\_\_ Design Year (20YY): \_\_\_\_

Traffic Projections Performed by:

Functional Classification: *NDOT or TDOT Functional Classification*

Complete Streets - Bicycle, Pedestrian, and/or Transit Standards:

None Bicycle Pedestrian Transit

## DESIGN AND STRUCTURAL CRITERIA

Roadway Name:

Design Speed:

Description of Proposed Typical Section:

*Insert sketch or reference attachment*

Major Interchanges/Intersections:

Lighting required:  No  Yes

Bridge/Culvert Type:  Size:  # of Spans:

Shall Context Sensitive Solutions procedures be utilized?  No  Yes

Design Exceptions to FHWA/AASHTO controlling criteria anticipated:

Design Variances to NDOT or TDOT Standard Criteria anticipated:

## UTILITY AND PROPERTY

Railroad Involvement:

Utility Involvements: *Listing of all utility companies and discussion of potential major utility conflicts*

Right-of-Way: Existing width: \_\_\_ft. Proposed width: \_\_\_ft.  
Required Right-of-Way anticipated:  No  Yes  Undetermined

Easements anticipated:

None  Temporary Construction  Permanent (Slope/Drainage)

Utilities to be relocated out of the ROW or placed underground?  No /  Yes

Anticipated total number of impacted parcels: \_\_\_\_\_

Displacements anticipated: Businesses: \_\_\_\_\_

Residences: \_\_\_\_\_

Other: \_\_\_\_\_

Total Displacements: \_\_\_\_\_

## **PERMITS**

**Environmental Permits, Variances, Commitments, and Coordination anticipated:**

**NDOT Encroachment Permit Required?**

**Army Corps Permit Required?**

**Coast Guard Permit Required?**

**Utility Permits/Agreements?**

**Railroad Permits/Agreements?**

**TDOT Excess Land Permit Required?**

## RESPONSIBILITIES AND COSTS

**Project Meetings:** *Provide dates of any Concept or other significant project meetings that have been held. Meeting minutes should be attached if available.*

Project Activity	Party Responsible for Performing Task(s)
Concept Development	<i>Consulting firm, NDOT, TDOT, etc.</i>
Design	
Right-of-Way Acquisition	
Public Outreach	
Utility Coordination (Preconstruction)	
Utility/Railroad Permits and/or Agreements	
Utility Relocation (Construction)	
Letting to Contract	
Construction Supervision	
Providing Material Pits	
Providing Detours	
Environmental Studies & Permits	
Environmental Mitigation	
Construction Engineering and Inspection & Materials Testing	

**Other coordination to date:**

**Project Cost Estimate and Funding Responsibilities:** *Attach current cost estimates to report.*

	PE	R/W Acquisition	Reimb. Utility	Constr*	Envir. Mitigation	CEI	Total Cost
Funded By							
\$ Amount							
Date of Estimate							

\* With appropriate level of contingency (see Appendix 6.B)

**ALTERNATIVES DISCUSSION**

<b>Preferred Alternative:</b> <i>description</i>			
<b>Estimated Property Impacts:</b>		<b>Estimated Total Cost:</b>	
<b>Estimated R/W Cost:</b>		<b>Estimated CST Time:</b>	
<b>Rationale:</b> <i>(Why was this alternative selected?)</i>			

<b>No-Build Alternative:</b> <i>description</i>			
<b>Estimated Property Impacts:</b>		<b>Estimated Total Cost:</b>	
<b>Estimated R/W Cost:</b>		<b>Estimated CST Time:</b>	
<b>Rationale:</b> <i>(Why was this alternative not selected?)</i>			

<b>Alternative 1:</b> <i>description</i>			
<b>Estimated Property Impacts:</b>		<b>Estimated Total Cost:</b>	
<b>Estimated R/W Cost:</b>		<b>Estimated CST Time:</b>	
<b>Rationale:</b> <i>(Why was this alternative not selected?)</i>			

**Comments/Additional Information:**

**LIST OF ATTACHMENTS/SUPPORTING DATA**

*List and attach as appropriate to project.*

1. Concept Layout on aerial photo background
2. Typical sections
3. Cost Estimates
4. Crash summaries for last three years
5. Traffic diagrams or projections
6. Capacity analysis summary
7. Summary of TE Study and/or Signal Warrant Analysis
8. Meeting Minutes
9. Signed Agreements
10. Environmental Summary
11. Other items referred to in the body of the report



**NDOT**

**Appendix 6.B – Cost Estimate Contingencies**





NDOT prepares cost estimates that are more refined as the project moves from concept to Final Plans. To account for the varying risks, the contingencies below should be added to the construction cost estimate for each project type listed.

<b>Project</b>	<b>Risk</b>	<b>Concept</b>	<b>PPFR</b>	<b>CPFR</b>
Enhancement/Bike/Ped/Safety	Low	5%	3%	0%
Reconstruction/Rehabilitation/No Added Capacity	Low	5%	3%	0%
Maintenance-Restoration and Rehabilitation	Medium	15%	10%	5%
Bridge New/Replacement	Medium/High	15%	10%	8%
New Construction	High	20%	17%	15%
Reconstruction/Rehabilitation Added Capacity	High	20%	17%	15%



***NDOT***

**Appendix 10.A – Grading Permit Application Checklist**



# **APPENDIX A PLAN SUBMITTAL INFORMATION**

- **Grading Permit Process Flowchart**
- **Checklist**
- **Plan Submittal Information Form**
- **Tennessee General Construction Stormwater Permit Certification Stamp**



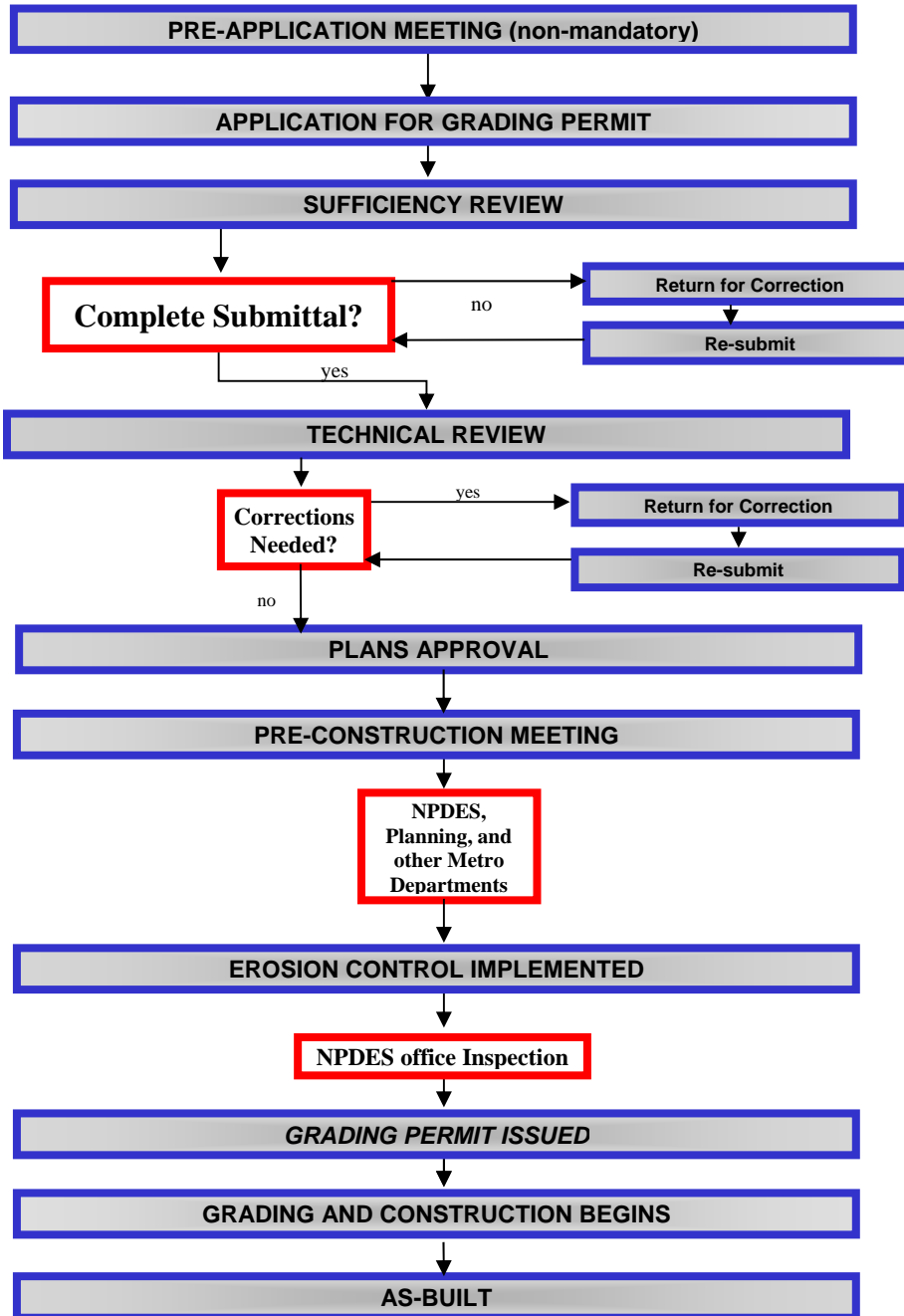
**Metropolitan Nashville - Davidson County  
Stormwater Management Manual  
Volume 1 - Regulations**

**February 2016**

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# Plans Review and Grading Permit Process





## Appendix A GRADING PERMIT APPLICATION CHECKLIST

	Included	Not Applicable
1. Project Fee Computation Worksheet completely filled out. Do not include payment with initial submittals. Calculated fees will be reviewed and verified during sufficiency review. Payment for Plan Review Fees will be required prior to technical review. Payment for Grading Permit fees, if applicable, will be required prior to a Pre-Construction meeting being scheduled.	<input type="checkbox"/>	
2. "Plans Submittal Information" form signed by the responsible party. Available on the MWS web page and at the front desk of the Stormwater Development Review Office. Plans will not be accepted for review without the completed form. (See page A-7)	<input type="checkbox"/>	
3. The Tennessee Construction General Permit Notice of Coverage (NOC) note on the plans (See page A-8). A NOC must be obtained by all sites that disturb one acre or more of land before a Grading Permit will be issued. Enter date NOC applied for: _____	<input type="checkbox"/>	<input type="checkbox"/>
4. Copies of all other required State and Federal permits (or copies of the permit applications), including, but not limited to ARAP, U.S. Army Corps of Engineers Section 404, or TDEC sinkhole permits.	<input type="checkbox"/>	<input type="checkbox"/>
5. Submittal of one copy of the following: grading and drainage plans (with post-construction stormwater management details), site utility plans, and erosion prevention and sediment control plans (including separate initial plan shown with existing conditions). Plans must be at a scale of no less than one inch = fifty feet and a maximum size of 24" x 36".	<input type="checkbox"/>	
6. Property Map and Parcel Number	<input type="checkbox"/>	
7. Existing and proposed site contours at an interval no greater than two (2) feet.	<input type="checkbox"/>	<input type="checkbox"/>
8. Existing and proposed buildings on the property.	<input type="checkbox"/>	<input type="checkbox"/>
9. Existing and proposed paving on property.	<input type="checkbox"/>	<input type="checkbox"/>





	Included	Not Applicable
10. Existing and proposed stormwater management structures on and in the immediate vicinity of the property. Must include the location, size, and capacity of the next two structures immediately downstream in every direction that will receive runoff. Must include size, type, slope, and invert elevation of the structures.	<input type="checkbox"/>	
11. Calculations showing that pre=post construction flows.	<input type="checkbox"/>	<input type="checkbox"/>
12. At least one benchmark located, with the proper datum reference indicated (If flood study exists, datum must match flood study.).	<input type="checkbox"/>	<input type="checkbox"/>
13. Locations of all construction site entrances/exits.	<input type="checkbox"/>	<input type="checkbox"/>
14. Temporary erosion and sediment control measures to be implemented during construction.	<input type="checkbox"/>	<input type="checkbox"/>
15. Final stabilization measures proposed for all disturbed areas on the property. Areas with slopes 3:1 or steeper must be stabilized by methods approved by MWS.	<input type="checkbox"/>	<input type="checkbox"/>
16. Stormwater management system design calculations including drainage maps based on 10-year design storm for minor systems and 100-year design for major systems. Calculation should be for pipes and ditches as well as areas where the runoff sheet flows.	<input type="checkbox"/>	<input type="checkbox"/>
17. Stormwater quantity detention design calculations including drainage maps, for detaining the 2-year, 5-year, 10-year, 25-year, 50-year, and the 100- year storm. Provide details of an emergency overflow device for storms over the 100-year event.	<input type="checkbox"/>	<input type="checkbox"/>
18. Stormwater quality design calculations (including drainage area maps and the LID Site Design Sheet if using Runoff Reduction or site limitation rationale if using Pollutant Removal. See Chapter 7 for more information)	<input type="checkbox"/>	<input type="checkbox"/>
19. Floodplain and floodway boundaries, floodplain elevations, and water quality buffer zones.	<input type="checkbox"/>	<input type="checkbox"/>
20. Cut and fill cross-sections and volume calculations for the floodplain.	<input type="checkbox"/>	<input type="checkbox"/>
21. First floor elevations for building in and adjacent to the floodplain.	<input type="checkbox"/>	<input type="checkbox"/>
22. Detail drawings of swales, ditches, inlets, head walls, detention pond outlet structures and overflows, erosion control measures, etc.	<input type="checkbox"/>	<input type="checkbox"/>



	Included	Not Applicable
23. Delineation of wetlands, streams, ponds, lakes, buffers, community waters or other environmentally sensitive areas. A note should be placed along each water quality buffer indicating the number of required buffer signs and that they will be installed every 100 feet.	<input type="checkbox"/>	<input type="checkbox"/>
24. One (1) copy of sinkhole and drainage well information, if applicable to the site conditions, including sinkhole 100-year volume information	<input type="checkbox"/>	<input type="checkbox"/>
25. Proposed construction schedule if greater than twelve months.	<input type="checkbox"/>	<input type="checkbox"/>
26. Plan must be stamped by a registered engineer.	<input type="checkbox"/>	<input type="checkbox"/>
27. The As-Built note shall be shown in a “stand alone” box on the grading and drainage plans. The note should read as follows:	<input type="checkbox"/>	<input type="checkbox"/>

In accordance with the Metro Stormwater Management Manual, Volume 1, Section 3.9, As-Built Certifications, MWS Stormwater Division must approve the following as-builts prior to issuance of the Use & Occupancy Permit:

- Underground detention and water quality infrastructure
- Above ground detention and water quality infrastructure
- Public storm sewer infrastructure
- Cut & fill in the floodplain
- Sink hole alterations

The engineer shall contact Stormwater Development Review staff for submittal requirements.

Some requirements will not be applicable to all plans, depending on the permit being requested. Omission of any of the heretofore mentioned requirements for detailed plans shall deem these plans as being incomplete, and shall be returned to the Developer, or designated Engineer, for completion before review



<b>Metropolitan Nashville-Davidson County</b>			
<b>Grading Permit Review</b>			
		<i>MWS use only</i>	
Date	<input type="text"/>	<input type="text"/>	
<b>Plans Submittal Information</b>			
RESUBMITTAL?	<input type="checkbox"/> No <input type="checkbox"/> Yes	Review Number (if Yes):	<input type="text"/>
<b>PROJECT INFORMATION</b>			
STANPAR	<input type="text"/>	Building Application #	<input type="text"/>
		PUD #	<input type="text"/>
<b>Check all items below that apply to project:</b>			
<input type="checkbox"/>	In floodplain	<input type="checkbox"/>	Applying for the Green Roof Credit
<input type="checkbox"/>	Conforms to Stormwater Management Manual Volume 5, The LID Manual		
Name	<input type="text"/>		
Description	<input type="text"/>		
Address	<input type="text"/>		
City	<input type="text"/>	Zip Code	<input type="text"/>
<b>VARIANCE REQUESTED</b> <input type="checkbox"/>			
Description	<input type="text"/>		
<b>OWNER/DEVELOPER INFORMATION</b>			
Company	<input type="text"/>		
Last Name	<input type="text"/>	First Name	<input type="text"/>
Address	<input type="text"/>		
City	State	Zip Code	<input type="text"/>
Phone	Fax	email	<input type="text"/>
<p>The grading permit for this project will be held by and bind to the owner/developer of the project. The owner/developer assumes all responsibility for the terms, conditions, rules, and regulations that govern the grading permit. Failure to notify MWS of a change in the ownership or development rights to this property may result in the issuance of a Notice of Violation, penalty, stop work order, or the revocation of the grading permit.</p>			
Signature	<input type="text"/>	Date	<input type="text"/>
<b>ENGINEER INFORMATION</b>			
Company	<input type="text"/>		
Last Name	<input type="text"/>	First Name	<input type="text"/>
Address	<input type="text"/>		
City	State	Zip Code	<input type="text"/>
Phone	Fax	email	<input type="text"/>
<b>OPERATOR/CONTRACTOR (if known)</b>			
Company	<input type="text"/>		
Last Name	<input type="text"/>	First Name	<input type="text"/>
Address	<input type="text"/>		
City	State	Zip Code	<input type="text"/>
Phone	Fax	email	<input type="text"/>





***NDOT***

Appendix 11.A – Roadway Design Checklist

# Roadway Design Checklist

GENERAL PROJECT INFORMATION (To be filled out by person requesting general project services)					
<b>Project Name:</b>	<input type="text" value="&lt;Project Name&gt;"/>	<b>Designer:</b>	<input type="text" value="&lt;Designer&gt;"/>		
<b>Nashville DOT Project #:</b>	<input type="text" value="&lt;NDOT #&gt;"/>	<b>CIB#:</b>	<input type="text" value="&lt;CIB #&gt;"/>	<b>Project Type:</b>	<input type="text" value="&lt;Project Type&gt;"/>
<b>Project Location:</b>	<input type="text" value="&lt;Project Location&gt;"/>		<b>Zone:</b>	<input type="text" value="&lt;Z&gt;"/>	<b>Council District:</b> <input type="text" value="&lt;CD&gt;"/>
<b>Project Limits From:</b>	<input type="text" value="&lt;From&gt;"/>	<b>To:</b>	<input type="text" value="&lt;To&gt;"/>		
<b>Project Description:</b>					
<input type="text" value="&lt;Project Description&gt;"/>					
<b>Reviewed By:</b>	<input type="text" value="&lt;Reviewer's Signature&gt;"/>			<b>Date:</b>	<input type="text" value="&lt;Date reviewed&gt;"/>

PRELIMINARY PLANS CHECKLIST			
<b>A. TITLE SHEET</b>			
<input type="checkbox"/>	Location map showing route to be improved, local roads, streams, Railroad's & towns	<input type="checkbox"/>	North arrow
<input type="checkbox"/>	County, State Route, description, & Project number	<input type="checkbox"/>	Scale
<input type="checkbox"/>	NDOT Project Number & CIB number	<input type="checkbox"/>	Design Traffic & Design Speed
<input type="checkbox"/>	Project Length	<input type="checkbox"/>	Index
<input type="checkbox"/>	Designer Name		
<b>B. SECOND SHEET</b>			
<input type="checkbox"/>	Typical cross-sections w/ dimensions cross-slopes, cut & fill slopes from Standard Drawings Or table	<input type="checkbox"/>	Side Roads
<input type="checkbox"/>	Private Drives, field entrance & business entrance		
<b>C. PROPERTY MAP</b>			
<input type="checkbox"/>	Boundary lines on all properties involved	<input type="checkbox"/>	ROW acquisition Table w/property owner's names, tract numbers, total area, deed book & page number of original tract
<input type="checkbox"/>	Existing roads & streams w/names	<input type="checkbox"/>	Property ROW
<input type="checkbox"/>	Survey and/or paper-located centerline	<input type="checkbox"/>	ROW notes
<input type="checkbox"/>	Utility owners		
<input type="checkbox"/>	North arrow		
<b>D. PRESENT LAYOUT SHEET</b>			
<input type="checkbox"/>	North Arrow	<input type="checkbox"/>	Property horizontal alignment w/curve data
<input type="checkbox"/>	Existing topo & existing ROW dimensions.	<input type="checkbox"/>	Breaks in property ROW flagged
<input type="checkbox"/>	Reference points location diagram or coordinates	<input type="checkbox"/>	Incorporated special items from Environmental document
<input type="checkbox"/>	Tentative slope lines	<input type="checkbox"/>	Tentative driveway locations
<input type="checkbox"/>	Tentative ROW & easement lines w/proper legend topo	<input type="checkbox"/>	Utilities
<input type="checkbox"/>	Tract Numbers	<input type="checkbox"/>	Loss of access or impaired access shown
<input type="checkbox"/>	Cross-drains		
<b>E. PROPOSED LAYOUT SHEET</b>			
<input type="checkbox"/>	Property Horizontal alignment w/pavement lines_, median opening_, & turn lanes_	<input type="checkbox"/>	Signal poles
<input type="checkbox"/>	Preliminary intersections	<input type="checkbox"/>	Noise walls



<input type="checkbox"/>	Traffic turning movements at all intersections	<input type="checkbox"/>	Retaining walls
<input type="checkbox"/>	Cross-drains	<input type="checkbox"/>	Check for street lighting
<b>F. PROFILES</b>			
<input type="checkbox"/>	Bench marks data	<input type="checkbox"/>	Tentative drainage data for cross-drains
<input type="checkbox"/>	Ground line & property grade on main line_ and side roads_	<input type="checkbox"/>	Preliminary Balance points of earthwork quantities w/ approximate excavation & embankment volumes in estimated balance
<input type="checkbox"/>	Ground line and tentative grades for property pavement drives, business & field entrances	<input type="checkbox"/>	Underground utilities; above ground utilities (crossing location only)
<input type="checkbox"/>	Ground line & tentative grade for other ramps	<input type="checkbox"/>	Design speed & "K" factor on vertical curves
<b>G. DRAINAGE MAP</b>			
<input type="checkbox"/>	Property horizontal alignment w/ existing drain (including areas & type of terrain)	<input type="checkbox"/>	Approximate location of drainage structures w/ area, "C" factor & flow

<b>RIGHT-OF-WAY PLANS CHECKLIST</b>			
<b>A. TITLE SHEET</b>			
<input type="checkbox"/>	Added coverage of each present sheet on map	<input type="checkbox"/>	Exclusions block
<input type="checkbox"/>	Beginning and ending of project	<input type="checkbox"/>	Finalized index of sheets
<input type="checkbox"/>	Project length	<input type="checkbox"/>	"ROW" added as type of work
<input type="checkbox"/>	Signatures in signature	<input type="checkbox"/>	Adjacent projects labeled
<input type="checkbox"/>	Equations block		
<b>B. SECOND SHEET</b>			
<input type="checkbox"/>	Retaining wall typicals w/locations	<input type="checkbox"/>	Guardrail location on typical
<input type="checkbox"/>	Noise wall typicals w/locations	<input type="checkbox"/>	Typical section added for haul roads in wetland areas
<input type="checkbox"/>	Spec. ditch typicals w/locations	<input type="checkbox"/>	Finalize mainline & side road typicals
<input type="checkbox"/>	Station limits added to different mainline typicals		
<b>C. PROPERTY MAP</b>			
<input type="checkbox"/>	Proposed ROW requirements	<input type="checkbox"/>	Begin & end of project
<input type="checkbox"/>	Acquisition block for tracts involved completed w/areas to be acquired	<input type="checkbox"/>	Notes & areas regarding loss of access or impaired access
<input type="checkbox"/>	Remainders	<input type="checkbox"/>	Recheck ROW notes & Utility owners
<input type="checkbox"/>	Easements (according to type)		
<b>D. PRESENT LAYOUT SHEET</b>			
<input type="checkbox"/>	Check all slopes w/cross-sections for correctness	<input type="checkbox"/>	Property structures where a fence will be turned into the wingwalls
<input type="checkbox"/>	All existing ROW lines properly identified & referenced	<input type="checkbox"/>	Property private drives, business & field entrances shown
<input type="checkbox"/>	All property ROW lines properly identified w/bearings & distances & offsets to the survey and/or paper located centerline	<input type="checkbox"/>	Areas to be obliterated or scarified shown
<input type="checkbox"/>	Easements identified w/bearings & distances, offset distances & stations at ROW line	<input type="checkbox"/>	Property w/impaired access or loss of access shown
<input type="checkbox"/>	Access control fence limits (Beginning & end w/stations & offsets)	<input type="checkbox"/>	Construction run-around and/or detours shown
<input type="checkbox"/>	ROW or easement for signal poles haul roads, sediment ponds in wetland areas, detention areas	<input type="checkbox"/>	Railroad easement note
<input type="checkbox"/>	ROW markers shown w/stations & offsets (State system only)	<input type="checkbox"/>	Cross-check all appropriate data w/property map sheets
<input type="checkbox"/>	Beginning & end of project		
<b>E. PROPOSED LAYOUT SHEET</b>			
<input type="checkbox"/>	Finalized pavement lines	<input type="checkbox"/>	Transition lengths & widths from proposed pavement to existing
<input type="checkbox"/>	Curbs& gutters	<input type="checkbox"/>	Rip-rap locations & limits
<input type="checkbox"/>	Sidewalks	<input type="checkbox"/>	Cattle passes
<input type="checkbox"/>	Channelizations	<input type="checkbox"/>	Handicap ramps
<input type="checkbox"/>	All drainage structures added	<input type="checkbox"/>	Signal and/or light poles
<input type="checkbox"/>	Property private drives, business & field entrances added	<input type="checkbox"/>	Noise walls
<input type="checkbox"/>	Spec. ditches w/type of lining	<input type="checkbox"/>	Check for existing street lighting or signals
<input type="checkbox"/>	Channel changes	<input type="checkbox"/>	Prints to Special Design (Interstate and Full Control of Access Projects)

<input type="checkbox"/>	Proposed Structures	<input type="checkbox"/>	Bridge drains
<b>F. PROFILES</b>			
<input type="checkbox"/>	All drainage structures w/ data	<input type="checkbox"/>	Finalized proposed grade for private drives, business & field entrances
<input type="checkbox"/>	Special ditches	<input type="checkbox"/>	Edge of shoulder transition at bridges
<input type="checkbox"/>	Channel changes	<input type="checkbox"/>	Finalized earthwork balances and volumes
<b>G. DRAINAGE MAP</b>			
<input type="checkbox"/>	Proposed cross drains and major side drains (3.45 ft or larger)	<input type="checkbox"/>	Channel changes
<b>H. CROSS-SECTIONS</b>			
<input type="checkbox"/>	Ground lines	<input type="checkbox"/>	Rock lines & slopes per soils report
<input type="checkbox"/>	Finished grade elevations	<input type="checkbox"/>	Horizontal & vertical scale
<input type="checkbox"/>	Superelevation rates w/ begin & end Station of transition	<input type="checkbox"/>	Complete culvert sections for all cross drains & major side drains with headwalls
<input type="checkbox"/>	Proposed template	<input type="checkbox"/>	Cross roads properly labeled
<input type="checkbox"/>	Cut & fill areas for all type materials	<input type="checkbox"/>	Adjust for guardrail flare
<b>I. FINAL PREPARATION OF PLANS</b>			
<input type="checkbox"/>	Consultant Engineer's Seal & Signature on Title Sheet		

## CONSTRUCTION PLANS CHECK LIST

<b>A. TITLE SHEET</b>			
<input type="checkbox"/>	New Title sheet for construction plans showing location map w/route to be improved. Local roads, streams, railroads & towns	<input type="checkbox"/>	Begin & end of project w/ project numbers & stations
<input type="checkbox"/>	North arrow	<input type="checkbox"/>	Roadway, bridge box, bridge & project length
<input type="checkbox"/>	Scale	<input type="checkbox"/>	Signature in signature block
<input type="checkbox"/>	County	<input type="checkbox"/>	Equations block
<input type="checkbox"/>	Route & description	<input type="checkbox"/>	Type of work (i.e. grade, drain, bridge pave, sign, lighting, etc.)
<input type="checkbox"/>	Design traffic	<input type="checkbox"/>	Adjacent construction projects labeled
<input type="checkbox"/>	Designer	<input type="checkbox"/>	"See sheet no. 1A for index" added to index area
<input type="checkbox"/>	Supervisor & checker's names	<input type="checkbox"/>	NDOT Project Number
<input type="checkbox"/>	Coverage of each present layout sheet on map		
<b>B. INDEX SHEET</b>			
<input type="checkbox"/>	Includes title sheet	<input type="checkbox"/>	Soils & geology plans including typicals
<input type="checkbox"/>	Index sheet	<input type="checkbox"/>	Utility sheets
<input type="checkbox"/>	Structure index & estimated quantities sheet (if required)	<input type="checkbox"/>	Culvert cross-sections
<input type="checkbox"/>	Estimated roadway quantities sheet	<input type="checkbox"/>	Roadway cross-sections
<input type="checkbox"/>	Typical section sheet	<input type="checkbox"/>	Cross road cross-sections
<input type="checkbox"/>	General notes sheet	<input type="checkbox"/>	Box bridge & culvert standards listed w/drawing number & description
<input type="checkbox"/>	Tabulation quantity sheets	<input type="checkbox"/>	Existing plans w/vile numbers cross referenced to file location (if needed)
<input type="checkbox"/>	Detail sheets (Including standard drawings that haven't been disturbed)	<input type="checkbox"/>	Standard roadway drawings applicable for this project listed w/drawing number, current revision date & title from roadway design standards index for: drainage-culvert & endwalls_, drain-catch basins & manholes_, roadway & pavement appurtenances_, safety appurtenances & fence_, traffic control appurtenances_, erosion control & landscaping_, bridge appurtenances_
<input type="checkbox"/>	Property maps	<input type="checkbox"/>	Light plans (including details & layout sheets)
<input type="checkbox"/>	Present layout sheets	<input type="checkbox"/>	Proposed layout sheets
<input type="checkbox"/>	Side road profiles	<input type="checkbox"/>	Pavement drive, business & field entrance profiles
<input type="checkbox"/>	Drainage maps	<input type="checkbox"/>	Traffic control plan
<input type="checkbox"/>	Erosion control plan	<input type="checkbox"/>	Pavement marking plan (if not standard)
<input type="checkbox"/>	Signing plans (including sign schedule & layout sheets)	<input type="checkbox"/>	Signalization plans (including details & layout sheets)
<b>C. ESTIMATED ROADWAY QUANTITY SHEET</b>			
<input type="checkbox"/>	Inc. roadway quantity block w/all items of construction to be bid including item numbers_, description_,	<input type="checkbox"/>	Quantity on this sheet check w/other tabulation blocks
<input type="checkbox"/>	Footnotes, paving_, & misc._	<input type="checkbox"/>	Quantity & item numbers agree w/cost estimate form
<input type="checkbox"/>	Box bridge quantity block_, w/item numbers_, description_, units_, & quantity	<input type="checkbox"/>	Quantities checked

<input type="checkbox"/>	Sign quantities	<input type="checkbox"/>	Lighting quantities
<input type="checkbox"/>	Removal items (from ROW Division)	<input type="checkbox"/>	Signal quantities
<b>D. TYPICAL SECTION SHEETS</b>			
<input type="checkbox"/>	ROW typicals (if construction plans did not involve a ROW project use the Preliminary & ROW 2 <sup>nd</sup> sheet checklist)	<input type="checkbox"/>	Property pavement schedule & pavement items coded
<input type="checkbox"/>	W/pavement layers	<input type="checkbox"/>	Future finished grade w/2 <sup>nd</sup> stage paving described (if applicable)
<input type="checkbox"/>	Pavement thickness	<input type="checkbox"/>	Underdrains
<input type="checkbox"/>	Grading widths		
<b>E. GENERAL NOTES SHEET</b>			
<input type="checkbox"/>	Including appropriate notes for grading	<input type="checkbox"/>	Pavement markings
<input type="checkbox"/>	Seeding & sodding	<input type="checkbox"/>	Pavement
<input type="checkbox"/>	Guardrail	<input type="checkbox"/>	Rip-rap
<input type="checkbox"/>	Drainage	<input type="checkbox"/>	Signing
<input type="checkbox"/>	Fencing	<input type="checkbox"/>	Special notes
<input type="checkbox"/>	Misc.	<input type="checkbox"/>	Signals
<input type="checkbox"/>	Road closure	<input type="checkbox"/>	Lighting
<b>F. TABULATION QUANTITY SHEETS</b>			
<input type="checkbox"/>	Grading quantity bulk (including balances)	<input type="checkbox"/>	ROW markers table
<input type="checkbox"/>	Ramp & side drain table	<input type="checkbox"/>	Storm drainage tables for catch basins, manholes, junction boxes, etc.
<input type="checkbox"/>	Guardrail table	<input type="checkbox"/>	And pipes
<input type="checkbox"/>	Pipe culvert, cross drains & endwall table	<input type="checkbox"/>	Box culvert table
<input type="checkbox"/>	Box bridges table	<input type="checkbox"/>	Quantities checked w/property layout & roadway quantity sheet
<b>G. DETAIL SHEETS</b>			
<input type="checkbox"/>	Special details not covered in standards	<input type="checkbox"/>	Non-disturbed standards
<input type="checkbox"/>	Retaining wall layouts		
<b>H. PROPERTY MAPS</b>			
<b>I. PRESENT LAYOUT SHEETS</b>			
<b>J. PROPOSED LAYOUT SHEETS</b>			
<input type="checkbox"/>	Special notes	<input type="checkbox"/>	Final guardrail locations
<input type="checkbox"/>	Limits of construction	<input type="checkbox"/>	Signs (if not on separate sheets)
<input type="checkbox"/>	Limit of paving	<input type="checkbox"/>	Construction items for this project labeled clearly
<input type="checkbox"/>	Intersection geometry & contours	<input type="checkbox"/>	Storm drainage coded for second sheet tabulation
<input type="checkbox"/>	Interchange geometry & contours		
<b>K. TRAFFIC CONTROL PLAN</b>			
<input type="checkbox"/>	Schematic detail for construction signs & placement	<input type="checkbox"/>	Plans rechecked for accuracy & safety in all phases
<input type="checkbox"/>	Tabulation bulk for construction signs, barricades & lights	<input type="checkbox"/>	Plan reviewed w/Reg. Safety Coordinator or Reg. Traffic Engineer if necessary
<input type="checkbox"/>	Traffic control notes	<input type="checkbox"/>	Lane closure details
<input type="checkbox"/>	And/or median cross-over details (include necessary curve data)	<input type="checkbox"/>	Showing any necessary portable median barriers, barricades, arrow boards & lights
<input type="checkbox"/>	Temporary signal details & quantities	<input type="checkbox"/>	Temporary pavement marking details (as necessary) & quantities

<input type="checkbox"/>	Stage construction details (as necessary)		
<b>IF ROAD IS TO BE CLOSED DURING CONSTRUCTION, THE FOLLOWING ITEMS ARE ALSO APPLICABLE</b>			
<input type="checkbox"/>	City and/or County officials notified	<input type="checkbox"/>	Detour routes determined & maintained by State_ or county/city_ (Include note on plans_)
<input type="checkbox"/>	Detour signs installed & maintained by State_ or county/city_ (Include note in plans_)	<input type="checkbox"/>	Map in plan showing detour signing (placement of construction signs & barricades may be included on this map)
<input type="checkbox"/>	Haul roads		
<b>L. EROSION CONTROL PLAN - to be included in all grade &amp; drain projects</b>			
<input type="checkbox"/>	Small scale layout of project adequate to show erosion control items include centerline	<input type="checkbox"/>	Wetland Mitigation Notes
<input type="checkbox"/>	Edges of pavement	<input type="checkbox"/>	Quantities calculated
<input type="checkbox"/>	Slope lines	<input type="checkbox"/>	Tabulated
<input type="checkbox"/>	Major drainage structures	<input type="checkbox"/>	And added to estimated roadway quantity block
<input type="checkbox"/>	North arrow	<input type="checkbox"/>	Environmental PI. Off. Consulted regarding treatment of haul roads in wetland areas
<input type="checkbox"/>	Approximate location of erosion control items	<input type="checkbox"/>	Lighting (if applicable)
<input type="checkbox"/>	Special details	<input type="checkbox"/>	Special notes
<b>M. PAVEMENT MARKING PLANS (if necessary)</b>			
<input type="checkbox"/>	Special marking details (to scale) to show limits of marking for intersections_, left turn lanes_, right turn lanes	<input type="checkbox"/>	Mylars to Special Design (Interstate and control of access projects)
<b>N. TRAFFIC SIGNAL PLANS (if necessary)</b>			
<b>O. LIGHTING PLANS (if necessary)</b>			
<b>P. FINAL PREPARATION OF PLANS</b>			
<input type="checkbox"/>	Check for or add the construction project number on all construction plan sheets	<input type="checkbox"/>	Recheck for any items inadvertently left out of the plan
<input type="checkbox"/>	Make sure Estimated Grading Quantity Sheets are clearly legible for printing (See Activity Check List)	<input type="checkbox"/>	Consultant Engineer's Seal & signature on Title Sheet
<input type="checkbox"/>	Completed Activity Status Sheet & turn job in to Special Design	<input type="checkbox"/>	Compile final design records for filing





**NDOT**

Appendix 12.A – ROW Ordinance

## Bill BL2018-1421

An ordinance authorizing the acquisition of certain right-of-way easements and property rights by negotiation or condemnation for use in public projects of the Metropolitan Government, initially for purposes of Public Works Department Project Number 2018-R-7, roundabout at Blue Hole Road and Pettus Road (Proposal No. 2018M-056ES-001).

WHEREAS, it is in the public interest that right-of-way easements and property rights be acquired by the Metropolitan Government, for use in public projects of the Metropolitan Government, initially for purposes of Public Works Department Project No.2018-R-7, Proposal No. 2018M-056ES-001, roundabout at Blue Hole Road and Pettus Road, and,

WHEREAS, the right-of-way easements are located on the property described in Exhibit 1 attached hereto; and,

WHEREAS, the right-of-way easements are further described in the Metropolitan Public Works Department's plans on file for Project No. 2018-R-7, Proposal No. 2018M-056ES-001, roundabout at Blue Hole Road and Pettus Road.

NOW, THEREFORE, BE IT ENACTED BY THE COUNCIL OF THE METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY:

Section 1. The Metropolitan Government of Nashville and Davidson County, by and through the Director of Public Property Administration, is hereby authorized to acquire by negotiation or condemnation the following described easements for use in public projects of the Metropolitan Government, initially for purposes of Public Works Department Project No. 2018-R-7, Proposal No. 2018M-056ES-001, roundabout at Blue Hole Road and Pettus Road, the same being for a public purpose and the public convenience requiring it.

Section 2. The easements to be acquired are described in the Metropolitan Public Works Department's plans on file for Project No. 2018-R-7, Proposal No. 2018M-056ES-001, roundabout at Blue Hole and Pettus Road, and located on the property described in Exhibit 1 attached hereto, which plans and Exhibit are incorporated herein.

Section 3. The Director of Public Property Administration is hereby authorized and directed, if necessary, to take and appropriate by condemnation proceedings the interests in real property described herein in the name of The Metropolitan Government of Nashville and Davidson County for use in public projects of the Metropolitan Government.

Section 4. All necessary and incidental costs of the right-of-way easements and property rights herein authorized to be acquired shall be paid from funds authorized from Fund No. 40118 and Business Unit No.42402118.

Section 5. This ordinance shall take effect from and after its final passage, the welfare of the Metropolitan Government of Nashville and Davidson County, Tennessee, requiring it.

### Sponsor(s)

Jacobia Dowell, Tanaka Vercher, Fabian Bedne, Freddie O'Connell

### Related Documents

- [Download Bill BL2018-1421](#)
- [Download Exhibit for BL2018-1421](#)
- [Legal Analysis for BL2018-1421](#)

### Legislative History

<b>Introduced</b>	December 4, 2018
<b>Passed First Reading</b>	December 4, 2018
<b>Referred to</b>	Planning Commission - Approved Budget and Finance Committee Planning, Zoning, and Historical Committee Public Works Committee
<b>Passed Second Reading</b>	December 18, 2018
<b>Passed Third Reading</b>	January 3, 2019
<b>Approved</b>	January 4, 2019

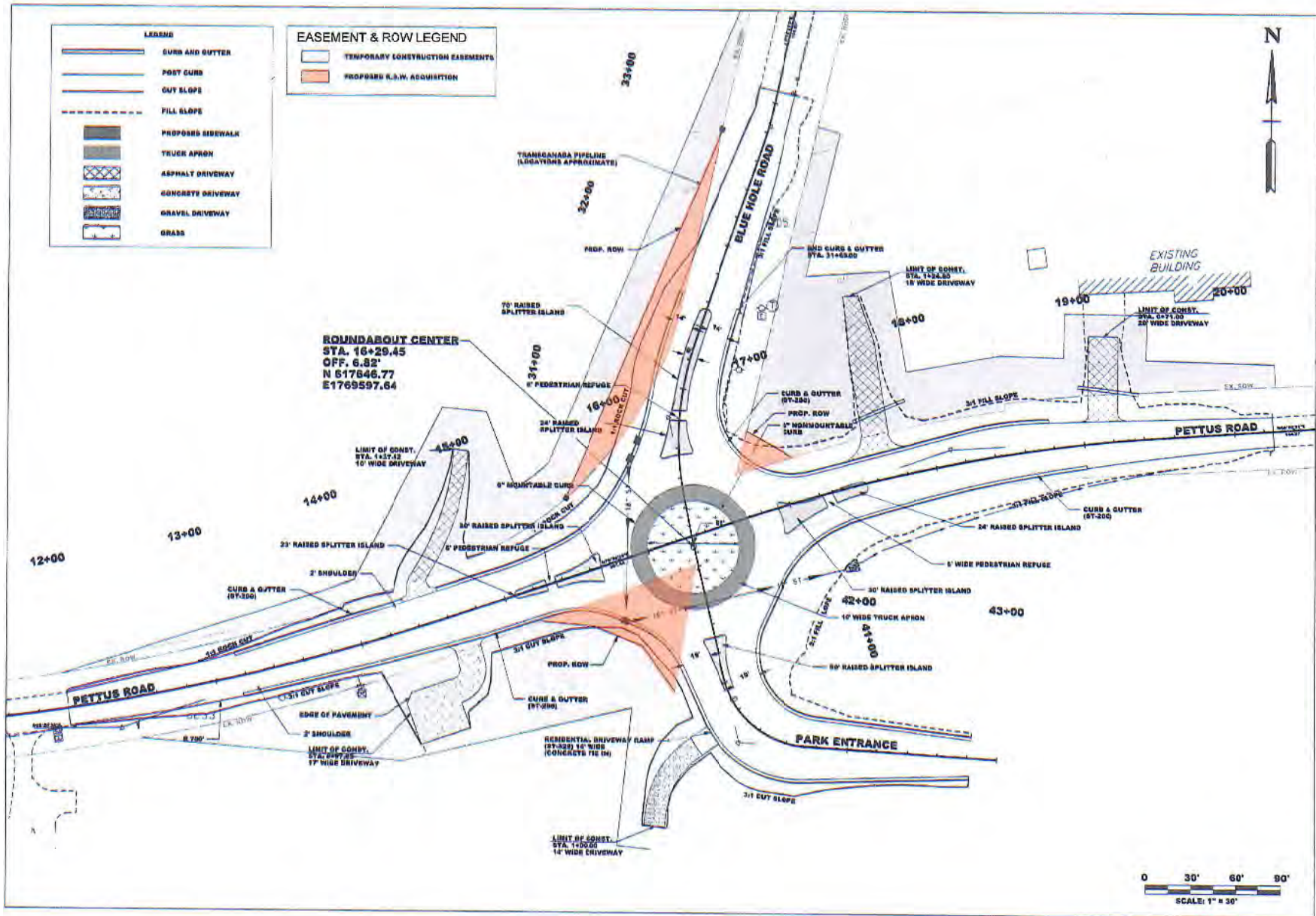
By

A handwritten signature in black ink, appearing to read "David B. King". The signature is written in a cursive style with a large, prominent "D" and "K".

Requests for ADA accommodation should be directed to the Metropolitan Clerk at 615-862-6770.

Last Modified: 01/15/2019 4:13 PM

EXHIBIT 1



REVISIONS	DATE	BY	DESCRIPTION

**COLLIEN ENGINEERING CO., INC.**  
 ENGINEERS AND ARCHITECTS  
 5560 FRANKLIN PIKE CIRCLE, BREITWOOD, TN 37027  
 PHONE: (615) 331-1441 FAX: (615) 331-1050

**PROPOSED LAYOUT**  
 PETTUS ROAD AND BLUE HOLE ROAD  
 PROPOSED ROUNDABOUT  
 METRO PUBLIC WORKS  
 DAVIDSON COUNTY, TENNESSEE

**R.O.W. PLANS**

DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 SCALE: 1" = 30"  
 YEAR: 2015  
 SHEET NO.: 4B

EXHIBIT 1

R.O.W. ACQUISITION TABLE											
TRACT NO.	PROPERTY ADDRESS	PROPERTY OWNERS	COUNTY RECORDS				TOTAL R.O.W. Acquisition (acres)	Total remaining acres	EASEMENT (SF)		
			TAX MAP NO.	PARCEL NO.	DEED DOCUMENT REFERENCE				TOTAL ACRES	PERM. DRAINAGE	TEMP. CONSTRUCTION EASEMENT
					BK.	PAGE					
1	5585 Pettus Road	PRENTICE & BEULAH GOODWIN	173	108	4248	545	3.000	0.000	3.000	0	5019
2	5595 Pettus Road	WILEY & JOYCE WILKERSON	173	94	4248	545	3.000	0.069	2.931	0	12487
3	5601 Pettus Road	METRO GOV'T	173	95	3929	923	3.000	0.262	2.738	0	0
4	5611 Pettus Road	METRO GOV'T	173	96	4489	498	13.100	0.000	13.100	0	0
5	5588 Pettus Road	CHARLES D. MATHIS II	173	146	6200	388	4.120	0.000	4.120	0	10821
6	5565 Blue Hole Road	CHARLES D. MATHIS II	173	161	6200	388	2.810	0.091	2.719	0	6325
7	5546 Blue Hole Road	JOHN G. CAMPBELL	173	52	5399	114	7.340	0.012	7.328	0	14152
8	5610 Pettus Road	JEANETTE VERCELLINO	173	138	5210	250	2.000	0.000	2.000	0	5678
ACQUISITION TOTAL (ACRES)								0.434		0	54482

Acres to be purchased =	0.172	total temporary easement (sf) =	54482	<b>Total Price:</b>
Price	\$14,984.64		\$65,378.40	





## Bill BL2018-1129

An ordinance authorizing the acquisition and subsequent conveyance of certain right-of-way easements, drainage easements, temporary construction easements and property rights by negotiation or condemnation for use in public projects of the Metropolitan Government, acting by and through the Metropolitan Department of Public Works, for the Lebanon Pike Sidewalk Improvements, Federal Project No. STP-M-24(60), State Project No. 19PLM-F1-128, PIN 121729.00 (Proposal No. 2018M-031ES-001).

WHEREAS, it is in the public interest that right-of-way easements, drainage easements, temporary construction easements and property rights ("casements and property rights") be acquired by the Metropolitan Government, for use in public projects of the Metropolitan Government, initially for the purposes of PIN 121729.00, Proposal No. 2018M-031ES-001, Lebanon Pike Sidewalk Improvements; and,

WHEREAS, said easements and property rights are located on the properties described in Exhibit 1, attached hereto; and,

WHEREAS, the easements and property rights are further described in the Metropolitan Public Works Department's plans on file for PIN 121729.00, Proposal No. 2018M-031ES-001, Lebanon Pike Sidewalk Improvements; and,

WHEREAS, upon acquisition, Metro will convey to the State of Tennessee, Tennessee Department of Transportation ("TDOT"), said easements and property rights acquired for PIN 121729.00.

NOW, THEREFORE, BE IT ENACTED BY THE COUNCIL OF THE METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY:

Section 1. The Metropolitan Government of Nashville and Davidson County, by and through the Director of Public Property Administration, is hereby authorized to acquire by negotiation or condemnation the following described easements and property rights for use in public projects of the Metropolitan Government, initially for purposes of PIN 121729.00, Proposal No. 2018M-031ES-001, Lebanon Pike Sidewalk Improvements, the same being for a public purpose and the public convenience requiring it.

Section 2. The easements and property rights to be acquired are described in the Metropolitan Public Works Department's plans on file for PIN 121729.00, Proposal No. 2018M-031ES-001, Lebanon Pike Sidewalk Improvements, and located on the property described in Exhibit 1, attached hereto, which plans and Exhibit are incorporated herein.

Section 3. The Director of Public Property Administration or designee, upon acquisition of said easements and property rights, is authorized to convey such interest as the Metropolitan Government may have in said easements acquired for PIN 121729.00, to the State of Tennessee.

Section 4. The Director of Public Property Administration or designee, when it is deemed necessary to acquire easements on a state route by eminent domain, is hereby authorized to request that the State Attorney General's Office initiate condemnation proceedings.

Section 5. All necessary and incidental costs of the easements and property rights herein authorized to be acquired shall be paid from funds authorized from Fund No. 40015 and Business Unit No. 42401015.

Section 6. This ordinance shall take effect from and after its final passage, the welfare of the Metropolitan Government of Nashville and Davidson County, Tennessee, requiring it.

### Sponsor(s)

Jeff Syracuse, Tanaka Vercher, Fabian Bedne, Jeremy Elrod

### Related Documents

- [Download BL2018-1129](#)
- [Download Exhibit for BL2018-1129](#)
- [Legal Analysis for BL2018-1129](#)

### Legislative History

Introduced	March 20, 2018
Passed First Reading	March 20, 2018
Referred to	Planning Commission - Approved Budget and Finance Committee Planning, Zoning, and Historical Committee Public Works Committee



Passed Second Reading	April 3, 2018
Passed Third Reading	April 17, 2018
Approved	April 18, 2018
By	

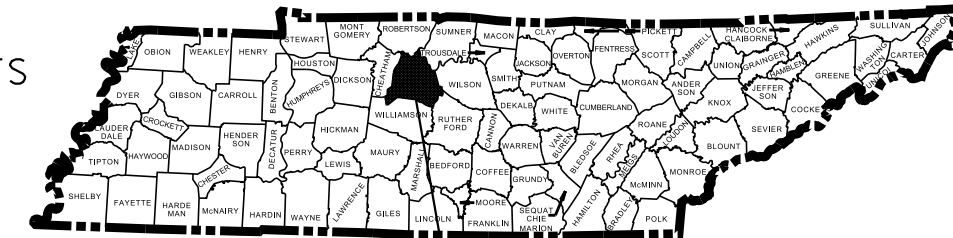
Requests for ADA accommodation should be directed to the Metropolitan Clerk at 615-862-6770.

Last Modified: 05/03/2018 1:46 PM

# PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY, TENNESSEE

METROPOLITAN GOVERNMENT OF NASHVILLE & DAVIDSON COUNTY, TENNESSEE	YEAR <b>2017</b>	SHEET NO. <b>1</b>
FED. AID PROJ. NO.	STP-M-24(60)	
STATE PROJ. NO.	19LPLM-F0-127	

LOCALLY MANAGED PROJECT



PROJECT LOCATION

## LEBANON PIKE (SR 24, US 70) SIDEWALK IMPROVEMENTS FROM MCGAVOCK PIKE TO OLD LEBANON ROAD

### RIGHT-OF-WAY

STATE HIGHWAY NO. 24    F.A.H.S. NO. 24

## Index Of Sheets

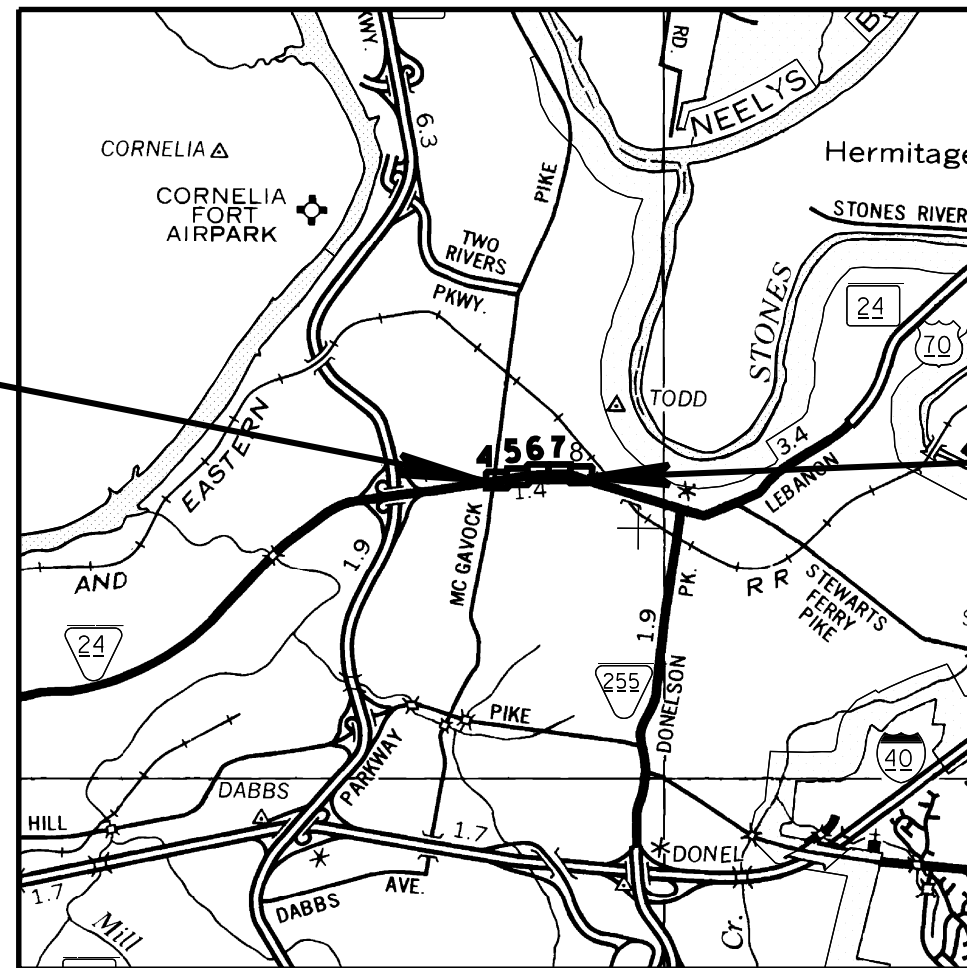
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL SECTIONS
3	R.O.W. & UTILITY NOTES
3A,3B,3C	ACQUISITION TABLE, PROPERTY MAP
4-8	PRESENT LAYOUT SHEETS
4A-8A	R.O.W. DETAIL SHEETS
4B-8B	PROPOSED LAYOUT SHEETS
4C-8C	PROFILES
4D-8D	UTILITY SHEETS
9, 10	ENTRANCE PROFILES
11, 12	DRAINAGE MAP
13	PIPE SECTIONS
14	EPSC NOTES
15-19	EPSC PLAN STAGE 1
20-24	EPSC PLAN STAGE 2
25-42	S.R. 24 (LEBANON PIKE) CROSS SECTIONS

**NO EXCLUSIONS**

**NO EQUATIONS**

**19LPLM-F0-127**  
**BEGIN PROJECT NO. STP-M-24(60) R.O.W.**  
**STA. 11+80.75 STATE HIGHWAY NO. 24**

**19LPLM-F0-127**  
**END PROJECT NO.**  
**STP-M-24(60) R.O.W.**  
**STA. 33+08.77**  
**STATE HIGHWAY NO. 24**



SURVEY DATE: JULY 27, 2017

TRAFFIC DATA	
ADT (2016)	34800
ADT (2036)	41740
DHV (2036)	4592
D	67 - 33
T (ADT)	4 %
T (DHV)	4 %
V	40 MPH

## R.O.W. PLANS

SEALED BY

SPECIAL NOTES

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED AUGUST 11, 2017 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

DESIGNED BY : MATT BRAWLEY  
 DESIGNER : MATT BRAWLEY      CHECKED BY BRIAN TROTTER  
 P.E. NO. 19LPLM-F0-127  
 PIN NO. 121729.00

**RIGHT-OF-WAY LENGTH 0.40 MILES**

DESIGNED BY:  
HDR  
750 OLD HICKORY BLVD  
BUILDING ONE, SUITE 200  
BRENTWOOD, TN, 37027  
615.337.4730  
hdrinc.com/follow-us

\$\$\$\$\$TIMES\$\$\$\$\$  
\$\$\$\$\$DONSPEC\$\$\$\$\$

TYPE	YEAR	PROJECT NO.	SHEET NO.
ROW	17	19LPLM-F0-127	3C

R.O.W. ACQUISITION TABLE																
TRACT NO.	PROPERTY OWNERS	COUNTY RECORDS				TOTAL AREA ACRES			AREA TO BE ACQUIRED ACRES			AREA REMAINING ACRES		EASEMENT (SQUARE FEET)		
		TAX MAP NO.	PARCEL NO.	DEED DOCUMENT REFERENCE		LEFT	RIGHT	TOTAL	LEFT (S.F.)	RIGHT	TOTAL	LEFT	RIGHT	PERM. DRAINAGE	SLOPE	CONST.
				BK.	PAGE											
<del>1</del>	<del>TRIANGLE REGENCY VI, LLC</del>	<del>95-04</del>	<del>28</del>													
<del>2</del>	<del>HJL, L.P.</del>	<del>95-04</del>	<del>5</del>	<del>9194</del>	<del>887</del>	<del>0.292</del>		<del>0.292</del>			<del>0.292</del>					
<del>3</del>	<del>JJJ HOBBS, LLC</del>	<del>95-04</del>	<del>40</del>	<del>8572</del>	<del>269</del>			<del>0.349</del>								
4	DONELSON CORNER, LLC	95-04	6			0.988		0.988	5265		0.867		693	523	1695	
<del>5</del>	<del>INLAND AMERICAN ST PORTFOLIO, LLC</del>	<del>95-04</del>	<del>41</del>	<del>8413</del>	<del>929</del>											
6	KROGER LIMITED PARTNERSHIP I	84-16	119			4.804		4.804	638		4.658			485	453	
7	DONELSON CORNER, LLC	95-04	8			0.156		0.156	370		0.147			19	499	
<del>8</del>	<del>OAKLEY ENTERPRISES, G.P.</del>	<del>95-04</del>	<del>43</del>													
9	DONELSON CORNER, LLC	95-04	241			0.317		0.317	621		0.302			33	877	
<del>10</del>	<del>FGMG PROPERTIES, LLC</del>	<del>95-04</del>	<del>44</del>													
11	JAMES M. & SUSAN B. BROWN AND WILLIAM K. & REGINA LEE	95-04	90			0.908		0.908	688		0.892			655	594	
<del>12</del>	<del>FGMG PROPERTIES, LLC</del>	<del>95-04</del>	<del>46</del>													
13	FIRST BAPTIST CHURCH OF DONELSON	95-04	10	8751	980	0.908		0.908	677		0.892			1982	69	
<del>14</del>	<del>FGMG PROPERTIES, LLC</del>	<del>95-04</del>	<del>44</del>													
<del>15</del>	<del>JOHN G. DOAK SR. ET UX</del>	<del>95-04</del>	<del>237</del>	<del>9230</del>	<del>740</del>											
16	DONELSON BAPTIST CHURCH	95-04	11			3.512		3.512	4630		3.405			1817	2155	
<del>17</del>	<del>EDWIN M. &amp; JESSIE A. BROWN</del>	<del>95-04</del>	<del>49</del>													
<del>18</del>	<del>WILLIAM CONOLY BROWN &amp; DAVID A. HOOD JR.</del>	<del>95-04</del>	<del>50</del>	<del>4294</del>	<del>931</del>											
<del>19</del>	<del>BLUEWATER PROPERTIES, LLC</del>	<del>95-04</del>	<del>51</del>	<del>4294</del>	<del>933</del>											
20	FREEMAN & WOODSON	95-04	13	6072	55	0.447		0.447	680		0.431			42	1744	
<del>21</del>	<del>DAVID C. JR. &amp; KAREN R. WATKINS</del>	<del>95-04</del>	<del>52</del>	<del>4290</del>	<del>654</del>											
<del>22</del>	<del>DAVID C. JR. &amp; KAREN R. WATKINS</del>	<del>95-04</del>	<del>53</del>													
23	DONALD E. & DONNA J. LOUNSBURY	95-04	14			0.427		0.427	831		0.408			41	1347	
<del>24</del>	<del>DAVID C. JR. &amp; KAREN R. WATKINS</del>	<del>95-04</del>	<del>54</del>													
25	MTCM ENTERPRISES, INC.	95-04	15.01						910		0.822			294	979	
<del>26</del>	<del>LITSEY BUILDING PARTNERS</del>	<del>95-04</del>	<del>55</del>	<del>3848</del>	<del>614</del>											
27	MTCM ENTERPRISES, INC.	95-04	15	4730	181	0.843		0.843	910		0.822			294	979	
<del>28</del>	<del>DONALD MCCULLARS ET UX</del>	<del>95-04</del>	<del>56</del>	<del>8959</del>	<del>192</del>											
29	MTCM ENTERPRISES, INC.	95-04	236	3909	439				910		0.822			294	979	
<del>30</del>	<del>CROTZER &amp; FINCH, LLC</del>	<del>95-04</del>	<del>57</del>													
31	SYNERGY REAL ESTATE HOLDINGS, LLC	84-16	150.01			0.966		0.966	88		0.964			11	125	
<del>32</del>	<del>CROWELL CAPITAL PARTNERS, GP</del>	<del>95-04</del>	<del>58</del>													
33	AH-SHEW & CHE-MING WONG	95-04	16	8550	107	0.437		0.437	752		0.419			580	637	
<del>34</del>	<del>CROTZER &amp; FINCH, LLC</del>	<del>95-04</del>	<del>59</del>													
35	THOMAS LEE GODDARD ET UX	95-04	18			0.544		0.544	1596		0.507			79	2039	
<del>36</del>	<del>GREENE COUNTY BANK</del>	<del>95-04</del>	<del>186</del>													
<del>37</del>	<del>DAVID C. JR. &amp; KAREN R. WATKINS</del>	<del>95-04</del>	<del>186</del>													
38	MICHAEL S. PETTY	95-04	19			0.461		0.461	692		0.445			395	957	
<del>39</del>	<del>MID SOUTH WAFFLES, INC.</del>	<del>95-04</del>	<del>246</del>													
40	RICHARD A. & LINDA SCHLABACH	95-04	21	10689	763	1.602		1.602	1329		1.571			648	1255	
<del>41</del>	<del>R C AND K INVESTMENTS, LLC</del>	<del>95-04</del>	<del>245</del>													
<del>42</del>	<del>LINEBERRY PROPERTIES, INC.</del>	<del>95-04</del>	<del>187</del>													
43	US COMMUNITY CREDIT UNION	95-04	23			0.946		0.946	61		0.944			32	274	
<del>44</del>	<del>HJL, L.P.</del>	<del>95-04</del>	<del>188</del>													
<del>45</del>	<del>CHRISTOPHER L. YOUNG</del>	<del>95-04</del>	<del>24</del>	<del>6866</del>	<del>72</del>	<del>0.340</del>		<del>0.340</del>								
<del>46</del>	<del>2620 ASSOCIATES, L.P.</del>	<del>95-04</del>	<del>249</del>													

# R.O.W. PLANS

**METROPOLITAN GOVERNMENT**  
OF NASHVILLE & DAVIDSON COUNTY, TENNESSEE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION

LEBANON PIKE  
SIDEWALK  
IMPROVEMENTS

RIGHT-OF-WAY  
ACQUISITION  
TABLE

SCALE: NTS

SHEET 3A OF 44

DISTURBED AREAS		
IN BETWEEN SLOPE LINES		1.163 (AC)
OUTSIDE SLOPE LINES		0.381 (AC)
TOTAL DISTURBED AREA		1.544 (AC)



***NDOT***

Appendix 12.B – Legislative and Mandatory Referral Processes

Updated 2/24/21

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### Electronic Legislation Filing Process

1. Assemble the following documents and put them in a PDF.
  - a. Legislative Tracking Form
  - b. Brief letter of explanation about the purpose of the Legislation
  - c. Resolution or Ordinance from Legal
  - d. Agreement or Contract if applicable
  - e. Any other applicable attachments such as maps, appraisals, reports, etc.
2. Send the PDF to the PW Director for signature and copy the PW Deputy Director with instructions to return the form to the original sender after completion.
3. If this is dealing with the purchase or abandonment of property, send the PDF to Public Property (Sean McGuire) for signature with instructions to return the form to the original sender after completion.
4. If this is dealing with a grant, send the PDF to the Grants Office (Vaughn Wilson) for review and signature with instructions to return the form to the original sender after completion.
5. After the above signatures have been received, send the PDF to the Budget Office (~~Alicia~~ - Kathy King  
~~Vivavouth~~) for review and initials with instructions to return the form to the original sender after completion.
6. After the above approval has been received, send the PDF to the Finance Director's office (Talia Lomax-O'dneal, cc Kim McDoniel, cc ~~Dennise Meyers~~) with instructions to return the form to the original sender after completion.
7. After the above signatures have been received, send the PDF to the Legal office (~~Sally Palmer~~ - Tara Ladd) where the document will be reviewed and circulated for Legal signatures and then filed with the Council Office.

# Legislative process for TDOT Agreements

Preparing the legislative package upon receipt of the agreement from the mayor's office –

- **Review Contract/Agreement Documents:** Make sure to read the TDOT cover letter and/or the agreement thoroughly to determine the following where applicable:
  - Does the Federal and State project numbers, PIN number, and project description, match on both documents?
  - Do we agree with the Section B of the Contract/Agreement listing the party responsible to complete and fund each project phase?
  - Are we in agreement with projects costs and shares per phase on the Exhibit Page? (All contracts/agreements should match the MPO TIP amounts except for Signal Maintenance and Railroad agreements).
  - Verify the contract/agreement has language to allow Nashville DOT to use TDOT Local Program's On-Call Consultants and to pay a deposit for those services. (This does not apply to Signal Maintenance and Railroad agreements)
  - if additional documents are attached to the agreement (i.e. location map, plans sheets, etc.) that will need to be circulated within the legislative package; and, the required documents to be returned to TDOT following Mayor and Metro Council approval.
- **Legislation Preparation:** Draft the legislation (a **resolution** for signal maintenance agreements, right-of-way proposals of acceptance, railroad maintenance agreements and local agency project agreements; and, an **ordinance** for participation agreements) to attach with the TDOT agreement. ***Resolutions are passed by the Metro Council on one reading; ordinances are passed on three readings.***
- **Request Mandatory Referral:** Contact Metro Planning Land Development Office (current contact, Sharon O'Conner) to request the proposal number for legislative tracking purposes and documentation. Metro Planning will circulate the document as part of the mandatory referral to all Metro agencies that may be impacted by the project outlined in the agreement.
- **Legal Review & Finalize Legislation:** E-mail (to Ms. O'Conner) both the agreement and the draft legislation as part of this request and copy the representative (currently Tara Ladd) in the Metro Legal Department. The legal representative will finalize the legislation by making any necessary corrections, additions or deletions and also add a tracking number to the document along with the proposal number once it's issued by Planning. Legal will send the final document back for the purpose of setting up the legislative tracking form and finalizing the legislative package.
- **Fill out the Legislative Tracking Form** (see attached example). Most maintenance agreements are of no additional cost to Metro; the example displays the zero cost in the **FINANCE** box on the form. On local agency project agreements, costs associated with the project will need to be filled out in the box with the appropriate amounts along with



# Legislative process for TDOT Agreements

a completed Grant Tracking Form (examples also attached). The remainder of the form is to be filled out in the following order:

- Desired filing date with Metro Council – pay careful attention to the filing deadlines for the Council and the Metro Finance Director before filing this out.
- Resolution or Ordinance – check the appropriate line.
- Contact (prepared by).
- Date prepared.
- Title (caption) – this should be the same information as displayed on the legislation.
- Submitted to Planning Commission - this is typically N/A on these type agreements.
- Proposal Number - as provided by Metro Planning Land Development.
- Proposing Department – generally Nashville DOT.
- Requested by – generally by the director of Public Works or assistant directors.
- Affected Departments – generally on maintenance agreements, Nashville DOT may be the only affected department. However, from time to time, other agencies (i.e. Parks, Planning) may be affected. This would have to be confirmed with those agencies.
- Affected Council Districts – research the district(s) where the project is located and identify them on this line.
- Legislative Category – check off the type of agreement that is being legislated (generally, these are categorized as an “Intergovernmental Agreement.”).

After the legislative package has been prepared –

**Get Signatures & Submit Legislation:** Seek out the proper Metro signatures. Internally, the Nashville DOT director will need to sign the legislation and the agreement. Externally, the package will then need to be delivered to the Office of Management and Budget for review and subsequently turned over to the Finance Director for his or her signature. The Office of Management and Budget (OMB) is located on the 2<sup>nd</sup> floor of the Howard Office Building at the Fulton Complex in 3<sup>rd</sup> Avenue South. *Before sending the package to OMB, scan the package and download it into the appropriate file folder for the record.*

After the legislative package has been signed and approved by the Mayor and Council –

**Certify & Send Contract/Agreements to TDOT for Execution:** The Metro Clerk’s Office will contact Nashville DOT when the legislation has been signed and certified (at this point, the resolution will have an RS(year & #) designation; the ordinance a BL(year & #). Make arrangements to pick up the package and upon receipt, scan another copy for the record and send the originals (signed legislation, certification, and agreement) back to TDOT for their commissioner’s and legal counsel’s signatures. *TDOT will then need to return the final signed copies back to be filed with the Clerk; Nashville DOT will need to keep a final copy for the record.*



***NDOT***

Appendix 13.A – Pre-Bid Checklist

(This Section reserved for a future update.)



**NDOT**

Appendix 13.B – Constructability Review Checklist

(This Section reserved for a future update.)