Goldsboro Road Bike and Pedestrian Improvements, Mandatory Referral, MR2018033

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Description

Construction of sidewalks, bike lanes and traffic improvements along a 1.18-mile-long section of Goldsboro Road (MD 614) between MacArthur Boulevard and River Road (MD 190) and sidewalk improvements along a 900-foot long section of MacArthur Boulevard between Goldsboro Road and Princeton Avenue in Bethesda/Glen Echo, Maryland.

- Applicant: Montgomery County Department of Transportation
- Bethesda/Chevy Chase Master Plan
- Filing Date: October 5, 2018; Extended by consent of MCDOT

Staff Recommendation: Approval to Transmit Comments

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Summary

The Montgomery County Department of Transportation (MCDOT) is proposing pedestrian, bicycle and traffic improvements along a 1.18-mile segment of Goldsboro Road (MD 614) in Bethesda/Glen Echo, Maryland, from approximately River Road (MD 190) to MacArthur Boulevard. The project limits also include approximately 900 feet along MacArthur Boulevard between Goldsboro Road and Princeton Avenue. The project location is depicted in Figure 1. The proposed improvements along Goldsboro Road will widen the road from a two-lane road with shoulders to two 11-foot travel lanes, 5 to 6-foot-wide separated bike lanes in each direction with 2 to 3-foot-wide buffers from traffic, a continuous sidewalk on the north side of the road and intermittent sidewalks provided on the south side of the road where space is available. At the intersection with MacArthur Boulevard, a 4-foot bikeable shoulder and an 8-foot wide shared use path is proposed along the east side of the traffic circle.

This project is included in the County Executive’s Recommended FY20 Capital Budget and FY19-24 Capital Improvements Program amendments as CIP Project No. P501917. This project has been proposed to start planning and design beyond the 35% design stage in FY22 with construction expected to start in FY25 or later (outside the current CIP timeframe). The current project cost estimate is $21.1 million. The 35% design plans are provided as Attachment A to this report.
Mandatory Referral Review

This proposal for the construction of sidewalk, bike lanes and road and intersection improvements is required to undergo the Mandatory Referral review process under the Montgomery County Planning Department’s Uniform Standards for Mandatory Referral Review. State law requires all federal, state, and local governments and public utilities to submit proposed projects for a Mandatory Referral review by the Commission. The law requires the Planning Board to review and approve the proposed location, character, grade and extent of any road, park, public way or ground, public (including federal) building or structure, or public utility (whether publicly or privately owned) prior to the project being located, constructed or authorized.

The applicant approved a suggested extension by Planning Department staff to the 60-day window for review and comment. The original 60-day window extended to December 4, 2018; this was extended to April 1, 2019.

Planning staff acknowledges that the implementation of master plan transportation recommendations is a challenge faced by the applicant in developing design plans to convert desired master plan recommendations into engineering design drawings. The design process up to 35 percent design brings clarity to considerably more detail than considered during a master plan, and issues such as environmental impacts, historical impacts, and construction costs may introduce new factors that need to be weighed in developing a final design solution. It is hoped that the Mandatory Referral process aids in this process to develop an optimal or at least an improved design solution.
Recommendations

Staff recommends approval to transmit the following comments to the Montgomery County Department of Transportation:

1. Significantly reduce the impacts to the Minnehaha Branch, its riparian buffer, adjacent forests and slopes, wetlands, and specimen trees.

2. Provide a Tree Save Plan at the 75-percent design stage that:
   a. Documents the location, size, and species of all specimen trees to be removed.
   b. Identifies the location, tree species, and size, of trees to be planted as mitigation for the removal of the specimen trees.
   c. Mitigates onsite for the removal of specimen trees at a ratio of one-inch diameter at breast height (dbh) for every four inches dbh removed.
   d. Details the tree protection necessary for all trees and forest saved but impacted by construction activities.
   e. Documents where and how the 3.38 acres of forest removal will be compensated.

3. To reduce impacts to the existing steep slopes on erodible soil, consider a cantilevered sidewalk and/or bikeway where feasible to protect the sensitive slopes and other natural resources.

4. Consider using porous sidewalks and/or bicycle lanes to reduce stormwater runoff and the need for stormwater management treatments in the stream valley buffer or forested areas.

5. Modify the plans to reduce unnecessary critical root zone impacts by tightening the limits of disturbance to the following specimen trees: T19, T22, T62, T66, T68, T71, T92.

6. Modify the plans to preserve the following specimen trees by tightening the limits of disturbance: T1, T9, T24, T29, T31, T32, T34, T35, T40, T41, T43, T63, T65, T67, T96, T95, T97, T98, T99, T100, and T101.

7. Retain existing forests instead of constructing two stormwater management facilities on the south side of Goldsboro Road at stations 121-125.

8. Retain all existing aquatic habitats and existing water levels including channel pools and stream runs to allow for species survival.

9. Preserve the existing deep fish pool on the north side of Goldsboro Road at station 133.5.

10. Tighten the limits of disturbance line to reduce impacts to the Minnehaha Branch stream valley, existing forests, steep slopes, and individual trees in the following areas:
    a. North side of Goldsboro Road between station 115.5 and 118.
    b. South side of Goldsboro Road between station 137.5 and 139.
    c. North side of Goldsboro Road between station 146 and 150.
    d. North side of Goldsboro Road between station 151 and 153.
11. At the Goldsboro Road intersections with Massachusetts Avenue and River Road, all signalized right-turn movements that will require right-turning vehicles to cross over crosswalks (with the exception of the westbound channelized right-turn lane on Goldsboro Road at River Road) should have “No Turn on Red” restrictions posted.

12. MCDOT and MDOT SHA should evaluate reducing the existing posted speed limit of Goldsboro Road from 35 mph to 30 mph with the implementation of this project.

13. Redesign the intersections of Goldsboro Road with Massachusetts Avenue and River Road as protected intersections, consistent with the Montgomery Planning Department’s Bicycle Facility Design Toolkit (developed as part of the recently adopted Bicycle Master Plan).

14. Modify the project to provide puppy tracks and green paint at the Goldsboro Road intersections with Tulip Hill Terrace, Rannoch Road, Massachusetts Avenue, Goldleaf Drive, Redwing Road, Wedgewood Road, Blackwood Road, Haviland Drive, and River Road.

15. Provide detailed discussion on MCDOT’s evaluation of ways to reconfigure the intersection of MacArthur Boulevard and Goldsboro Road to simplify pedestrian and bicycle crossing movements and improve the operation and safety for all intersection users, as requested by the Planning Board in its letter to the applicant on September 26, 2014 (see Attachment D).

16. To minimize cost, forest loss, stormwater and stream channel impacts of this project, consider an alternative concept that includes a 10-foot-wide sidepath on one side of the road, intermittent sidewalks at bus stops on the other side of the road, and a 4-foot-wide bikeable shoulder on the eastbound side. This would reduce the total typical cross section compared to the proposed design by up to seven feet. While not consistent with the bikeway recommendation in the Bicycle Master Plan on Goldsboro Road, this alternative would be consistent with the general principles of the Bicycle Master Plan. A sketch of this option is shown below in Figure 2.

![Figure 2: Alternative Concept – Goldsboro Road](image)
Proposal

Project Description

The Montgomery County Department of Transportation (MCDOT) is proposing pedestrian, bicycle and traffic improvements along a 1.18-mile segment of Goldsboro Road (MD 614) in Bethesda/Glen Echo, Maryland, from approximately River Road (MD 190) to MacArthur Boulevard. The proposed improvements along Goldsboro Road will include the following:

1. Providing an expanded roadway typical section to include two 11-foot travel lanes, 5 to 6-foot-wide separated bike lanes in each direction with 2 to 3-foot-wide striped buffers with flexible delineator posts,

2. Continuous sidewalk on the north side of the road and intermittent sidewalks on the south side of the road where space is available.

3. At the Goldsboro Road intersection with MacArthur Boulevard, a 4-foot bikeable shoulder and an 8-foot wide shared use path is proposed along the east side of the traffic circle,

4. Addition of one new crosswalk with a median refuge on MacArthur Boulevard to the south of the traffic circle and Goldsboro Road,

5. Replacement of the existing pedestrian bridge connecting to Ramsgate Road providing a 12-foot-wide the bridge (clear distance between railings),

6. Addition of three new mid-block crosswalks at the following locations:
   a. East of the Exxon gas station,
   b. Between Tulip Hill Terrace and Rannoch Road, and
   c. West of Wedgewood Road.

7. Improvement of the existing crosswalk to the east of Goldleaf Drive with a center refuge island,

8. Crosswalks at all legs of the intersections of Goldsboro Road with Massachusetts Avenue (MD 336) and River Road (MD 190), and

9. Removal of three channelized right-turn lanes at the intersection of Goldsboro Road with River Road (MD 190) – the eastbound, northbound and southbound approaches.

A project location map showing more regional context is provided in Figure 3.

The proposed improvements also include drainage upgrades, reconstructing traffic signals at the intersections with Massachusetts Avenue (MD 396) and River Road (MD 190), 1,000 feet of stream restoration along the Minnehaha Branch, and installing five (5) retaining walls to minimize right-of-way and environmental impacts. Two box culvert bridges will be impacted by the improvements with one being extended (Structure S1) near Tulip Hill Terrace and the other being replaced with a larger twin box culvert (Structure S2) north of Goldleaf Drive.
Goldsboro Road is classified in the Master Plan of Highways and Transitways as a two-lane arterial road between MacArthur Boulevard and Massachusetts Avenue (MD 336) and is classified as a two-lane major highway between Massachusetts Avenue and River Road (MD 190). Currently, Goldsboro Road has narrow shoulders and short segments of sidewalk. Goldsboro Road provides a key connection between MacArthur Boulevard and downtown Bethesda, and this road experiences considerable use by cars and bicycles, particularly during the weekend. The narrow road and shoulders, high speed of passing vehicles, and the horizontal and vertical geometry along this corridor makes this a high-stress corridor for bicycle travel. It is even more stressful for pedestrians, as for much of this study area, sidewalks and safe crossings are non-existent. This project will provide a continuous 5-foot-wide sidewalk along the north side of Goldsboro Road between MacArthur Boulevard and River Road, some segments of sidewalk for short sections along the south side of Goldsboro Road to provide connections to local side streets and access to bus stops, and 5-foot-wide separated bike lanes on both sides of the road. This project will significantly improve bike and pedestrian travel along Goldsboro Road.

The project is currently at the 35 percent design phase and the full design and construction of this project (excluding current design work) has been estimated to cost approximately $21.1 million. The full plan set is attached with this staff report at Attachment A.

**Project Background**

Goldsboro Road currently is generally characterized as a two-lane (12-foot wide travel lanes) meandering road designed within a stream valley, and as a result it has narrow shoulders with guardrail located close to the road, limited sidewalks and no specific bikeways. The road currently is typically open section (no curbs) with 1,000 linear feet of partial closed section (curbs with drainage) adjacent to homes in the eastern limits of the study area. The posted speed limit along Goldsboro Road is 35 miles per hour (mph).
In 2014, the Planning Board reviewed the Goldsboro Road Facility Planning Phase 1 study and recommended that MCDOT proceed with sidewalks and bike lanes on this road, consistent with the 2005 Countywide Bikeways Functional Master Plan. Later that year, the T&E committee reviewed the plan and recommended upgrading the bike lanes to separated bike lanes. MCDOT proceeded with the Facility Planning Phase 2 study based on the direction from the T&E committee and the 2018 Bicycle Master Plan reflects this recommendation.

**Sidepath Design in vicinity of MacArthur Traffic Circle**

An eight-foot-wide sidepath is proposed at two locations as shown in blue shading in Figure 4:

1. Along the east side of MacArthur Boulevard from where Goldsboro enters the circle (in front of the existing Exxon station) to Princeton Avenue (total distance of 900 feet), and
2. Along the south side of Goldsboro Road from a pedestrian crosswalk to the east of the Exxon station to the south side of the MacArthur traffic circle at a pedestrian crosswalk to cross over MacArthur Boulevard.

The first sidepath will have a 6-foot-wide buffer, while the second sidepath will not have a buffer due to topographical/environmental constraints. While the project includes pedestrian and bicycle improvements at this intersection, there are no significant changes to the intersection for motor vehicles. In the 2014 review of this project, the Planning Board specifically asked MCDOT to consider intersection improvements to simplify pedestrian and bicycle crossing movements and improve the operation and safety for all intersection users. (See letter to the applicant dated September 26, 2014 and included as Attachment D).
**Typical Cross Sections – Goldsboro Road**

The proposed project includes a continuous 5-foot-wide sidewalk on the north side of Goldsboro Road, some intermittent sidewalks for short sections along the south side of Goldsboro Road to provide connections to local side streets and access to bus stops, and two one-way separated bike lanes on each side of the road. Figures 5 through 7 show the proposed typical cross sections between MacArthur Boulevard and just west of River Road. The buffer between the sidewalk and the curb on the north side of the road varies from zero to 6.5 feet in width with most of the corridor having a three-foot-wide buffer. The marked buffers between the separated bike lanes and the travel lanes are generally three feet wide in the westbound direction but vary between two to three feet wide in the eastbound direction. The buffer between the sidewalk on the north side of the road and guardrail or retaining wall varies between two to three feet in width and the buffer between the eastbound separated bike lane and guardrail on the south side of the road varies in width from one to two feet.
The buffers between the street and the bike lanes will have flexible delineator posts that will be removed during the winter months to enable snow plowing. In effect, the bikeway will function as separated bike lanes for the majority of the year and buffered bike lanes for several months during the year.

**Intersection of Goldsboro Road with Massachusetts Avenue**

Figure 8 displays the proposed design of the intersection of Goldsboro Road and Massachusetts Avenue. Blue shading shows proposed sidewalks and green shading shows proposed separated bike lanes. Due to the proximity of the Minnehaha Branch stream along the north side of Goldsboro Road, all widening will occur from the south side. This will create a maximum encroachment into the existing vegetated intersection quadrants of 40 feet west of Massachusetts Avenue and 30 feet east of Massachusetts Avenue. At this intersection, two crosswalks will be added across Goldsboro Road with accessible ramps and audible pedestrian signals.

![Figure 8: Proposed Intersection Design – Goldsboro Road at Massachusetts Avenue](image)

**Intersection of Goldsboro Road with River Road (MD 190)**

The proposed typical cross section through the River Road intersection is shown below in Figure 9. Through this section of the design, there will be a 5 to 8-foot-wide sidewalk/shared-use path on the north side of Goldsboro Road and a 5-foot-wide sidewalk on the south side of Goldsboro Road. The sidewalk buffers will be 5’4” on the north side and 3’4” on the south side. Through the intersection area, the 5-foot-wide separated bike lanes will be marked with no buffer between the travel lanes. This can be shown more clearly in Figure 10 which displays the plan view of the intersection design. Blue shading shows proposed sidewalks and green shading shows proposed bike lanes.
The intersection of Goldsboro Road with River Road (MD 190) will be improved significantly as part of this design project. The project will include the following design improvements:

- Elimination of channelized right-turn lanes on three out of the four approaches. The westbound channelized right-turn lane will remain.
- Addition of crosswalks with accessible ramps and audible pedestrian signals on the northbound, eastbound and westbound approaches. The southbound River Road approach currently has a crosswalk which will be maintained and improved, and
- Addition of 5-foot-wide bike lanes (no buffer) on Goldsboro Road through the intersection.
Mid-block Pedestrian Crosswalk Design
The project will add three new crosswalks along Goldsboro Road as mentioned previously:

- East of the Exxon gas station,
- Between Tulip Hill Terrace and Rannoch Road, and
- West of Wedgewood Road.

Figure 11 displays the design for the proposed crosswalk between Tulip Hill Terrace and Rannoch Road. The other three locations have been designed with similar elements.

Pedestrian Bridge Over Minnehaha Branch
The existing pedestrian bridge near Ramsgate Road will be replaced as part of this project with a wider bridge structure providing a 12-foot-wide clear path (distance between railings). This equates to an effective width of 8 feet.

Transportation Analysis

Design Elements - Transportation

1. **General Comment:** Overall, the design has been thoughtfully implemented, but fitting a cross section this wide has its challenges. It is difficult to build or widen a road that was originally designed within a stream valley. The design deviates from AASHTO and NACTO standard designs primarily in an effort to reduce the limit of disturbance (LOD), particularly along the Minnehaha Branch. This results in reduced buffers between the sidewalks and separated bike lanes (0 to 3 feet), reduced width of the bike lanes (they tend to be mostly 5 feet in width, not 6.5 feet which is preferred), reduced buffer between the travel lanes and separated bike lanes (can be as narrow
as 2 feet, not 5 feet which is preferred), and shy distances between separated bike lanes and guardrail (should be 2 feet minimum but they are 1.5 feet for short distances).

2. **Separated Bike Lanes or Buffered Bike Lanes**: The buffers between the street and the bike lanes will have flexible delineator posts that will be removed during the winter months to enable snow plowing. In effect, the bikeway will function as separated bike lanes for the majority of the year and buffered bike lanes for several months during the year.

3. **Posted Speed Limit on Goldsboro Road**: MCDOT should evaluate reducing the existing posted speed limit of Goldsboro Road from 35 mph to 30 mph with the implementation of this project. While this road does not have a target speed set within the Master Plan of Highways and Transitways, 30 mph is a more appropriate speed limit along this section of Goldsboro Road with the improvements proposed.

4. **Pavement Markings for Separated Bike Lanes**: The current pavement marking design is not consistent with other MCDOT bike lane projects. Dashed green paint and puppy tracks (dashed white lines) should be used for bike lanes at all driveways and intersections. Pavement markings for the separated bike lanes should be extended up to the intersections/crosswalks. A sample of the treatment on Spring Street in Silver Spring is displayed below in Figure 12.

5. **“No Turn on Red” signage at signalized intersections to improve bicycle and pedestrian safety**: Where Goldsboro Road intersects Massachusetts Avenue and River Road, post “No Turn on Red” restrictions for all right turn movements.

6. **Protected Intersections**: Redesign the intersections of Goldsboro Road with Massachusetts Avenue and River Road as protected intersections, consistent with the Montgomery Planning Department’s Bicycle Facility Design Toolkit (developed as part of the recently adopted Bicycle Master Plan).
7. **Difficulty for left turns for bicycles while in separated bike lanes at unsignalized intersection:**
   When a bicycle rider is traveling in a separated bike lane and desires to turn left onto a road that is not signalized, there is no clear and easy way to make that maneuver. The bicyclist can either leave the separated bike lane, becoming a vehicle, and then turn left in the travel lane; or the bike rider can stop in the bike lane and cross at a crosswalk. MCDOT should try to develop design solutions for future projects to address this issue.

**Master Plan Conformance – Transportation**

The project is in conformance with the 2018 Bicycle Master Plan and the 2018 Master Plan of Highways and Transitways (MPOHT). The 2018 Bicycle Master Plan recommends one-way separated bike lanes along both sides of Goldsboro Road between MacArthur Boulevard and Bradley Boulevard. The 2018 Master Plan of Highways and Transitways classifies Goldsboro Road between MacArthur Boulevard and Massachusetts Avenue (MD 336) as a two-lane arterial with a master plan right-of-way of 80 feet, and Goldsboro Road between Massachusetts Avenue (MD 336) and River Road (MD 190) as a two-lane Major Highway with a master plan right-of-way of 120 feet. The existing right-of-way along Goldsboro Road ranges from 70 to 120 feet. Goldsboro Road does not have a master planned target speed assigned by the MPOHT.

**Historic Resources Analysis**

Historic Preservation reviewed the latest proposal for any potential direct or indirect impacts to historic properties, including archaeological sites. While a portion of the overall limits of the project appear to be adjacent to Washington Aqueduct and the right-of-way of a 19th-century railroad, there is no ground disturbance proposed in or adjacent to these sites. There are no Master Plan or Locational Atlas properties impacted by this project. Historic Preservation staff have no further comments to add on the first Maryland Historic Trust (MHT) Review and concur that there will be no impact to historic properties as a result of this project.

**Environmental Analysis**

**Environmental Analysis – Existing Conditions**

The study area contains 38.1 acres including: 8.58 acres of forest; 0.12 acres of wetlands; 19.54 acres of stream buffer; and 9.81 acres of floodplains. The Minnehaha Branch, part of the Glen Echo Tributaries, runs parallel to Goldsboro Road. It’s a Use Class 1-P stream draining into the Potomac River. The length of the stream traversing through the site is 1.31 acres. There are no rare, threatened, or endangered species within the site. The Minnehaha Branch has a narrow buffer with steep forested slopes, undulating forest stands, and a few small pocket wetlands (Figures 13 and 14). There are many large specimen trees within the associated forests and along the stream banks that hold the steep slopes in place while providing the road and stream with shade. The stream bed contains a stable rocky surface with large indigenous outcrops, fish runs, and deep pools of water that aerate the stream.
Environmental Analysis – Proposed Plan

The plan proposes the removal of 3.38 acres of forest, 36 specimen trees equal to or greater than 30 inches in diameter at breast height, and portions of the wetlands. The existing forest buffer between the stream and Goldsboro Road ranges in width from 14-feet wide at its narrowest, to 57-feet at its widest. In some locations, the last remnant forested stream buffer will be removed. Two stormwater management facilities are proposed requiring the clearing of healthy forests that now provide habitat for
many species including foxes, owls, birds, and amphibians. In various locations, new and expanded stormwater outfalls will necessitate instream rip-rap and swale construction filling in stream pools. The expanded roadway will require extensive artificial stabilization measures such as gabion rip-rap, gravity and retaining walls, and other engineering methods. The proposed road improvements will dramatically alter one of the last inner beltway suburban bucolic roads with significant changes to the tree canopy and increases in impervious surfaces that are inconsistent with the road’s character environmentally.

The 35% drawings submitted by the Montgomery County Department of Transportation did not include sufficient efforts to minimize impacts to the Minnehaha Branch, its buffers, and the natural resources along Goldsboro Road. Although narrow, the shaded riparian buffer serves as a critical element in protecting the stream by cooling water temperatures, filtering pollutants from Goldsboro Road, and providing a wildlife corridor linkage. The proposed expansion of the road and removal or impacts to the riparian buffer is inconsistent with the environmental recommendations found in the Environmental Guidelines, Chapter 22A of the Forest Conservation Law, and the Bethesda-Chevy Chase Master Plan. Outlined in the Specific Site Recommendations below are locations where the limits of disturbance can be reduced to save specimen trees, forested areas, wetlands, the stream buffer and its associated banks. However, the areas shown below are not the only locations where impacts should be minimized. They are specific areas of extreme concern and staff requests reconsideration to protect the unique resources found in these locations.

The following citations are found in our governing regulations, guidelines, and master plans. They support staff’s position and the rationale for reducing impacts to the natural resources found along Goldsboro Road.


The Environmental Guidelines (January 2000) outlines recommended stream buffer widths based on their associated slopes, soils, and water quality. The Minnehaha Branch is a Use I/I-P stream (suitable for water contact sport and fishing). The Environmental Guidelines recommends a stream buffer of 100 feet on both sides of the stream, which can be extended to 150 feet in areas with steep slopes. Currently the area between the top of the stream bank to the edge of Goldsboro Road paving ranges from 14 to 57 feet at its widest. The proposed bikeway and sidewalks will reduce the nominal buffers even further causing increased stream temperatures, reduced water quality, and loss of terrestrial and aquatic habitat. The Environmental Guidelines allows for small amounts of clearing and grading in a buffer on a “case-by-case basis” if the applicant has demonstrated the stream buffer encroachment has been minimized. A rationale must also demonstrate that existing sensitive areas have been avoided (forest, wetlands, floodplains, and steep slopes). The applicant has not presented rationale for their encroachment into the stream buffers nor have they demonstrated that any natural resources minimization efforts were made.

Although Goldsboro Road was constructed prior to the effective date of the Environmental Guidelines, the proposed activity requires the submission of a Natural Resources Inventory/Forest Stand Delineation (NRI/FSD). NRI/FSD 420160250 was approved by the NRI/FSD staff on January 13, 2016.
**Forest Conservation**

The plan proposes the removal of 3.38 acres of forest, 36 specimen trees equal to or greater than 30 inches diameter at breast height (dbh), portions of wetlands, and forested stream buffers. The applicant requested an exemption from submitting a forest conservation plan under section Chapter 22A-5, of the County code. The exemption from submitting a forest conservation plan, plan number 42019041E was confirmed on November 21, 2018. Activities exempt from submitting a forest conservation plan under Chapter 22A-5 of the County code must comply with Section 22A-9. This section directs County highway projects to minimize forest cutting or clearing and loss of specimen or champion trees to the extent possible while balancing other design, construction, and environmental standards. The “constructing agency must make a reasonable effort to minimize the cutting or clearing of trees and other woody plants.” In addition, the County has not documented the number and size of specimen trees proposed for removal. A Tree Save Plan must include the trees proposed for removal and mitigation for the loss of those trees at a ratio of one-inch dbh for every four inches dbh removed.

If a County highway project proposes to cut or clear more than 20,000 square feet of forest, the County must reforest at a rate of one acre of reforestation for each acre of forest removed. The applicant has provided no information on how they will meet this requirement. Since 3.38 acres of forest is proposed for removal a planting plan is needed.

Furthermore, the applicant has not demonstrated that “a reasonable effort to minimize the cutting or clearing of trees and other woody plants” occurred in accordance with Chapter 22A-9 of the County code. Site-specific recommendations have been provided in this review on how the applicant could reduce the removal of trees and forests.

**Bethesda-Chevy Chase Master Plan (April 1990)**

A major goal of the Master Plan is to protect the moderately (15-25 percent slope) and extremely steep (25+ percent slopes), mature forests, stream quality, and floodplain valleys which are important to the quality of life for Bethesda-Chevy Chase.

The Master Plan recommends preservation of the Potomac Palisades’ unique environmental features of steeply wooded slopes and vistas and the perpetuation of the open space character established in the area. It also makes general recommendations for the protection of forests along stream valleys and steeply sloped land within the Potomac Palisades.

**Stormwater Management**

The Department of Permitting Services approved a stormwater ‘concept’ plan on February 16, 2018. The stormwater management plan proposes to remove healthy mature trees and forests along with a native understory, a fox den, and other wildlife species replacing it with unshaded open bioretention systems and wet swales. The majority of the stormwater management target treatment of 19,050 cubic feet of storage is waived due to site constraints and high ground water elevations (Attachment C).
Staff does not support this concept stormwater management plan and requests MCDOT significantly modify the stormwater management plan to protect the existing forests and trees for the following reasons:

1. The objectives of the Maryland Department of the Environment (MDE) stormwater management ordinance is to effectively mimic “woods in good condition.” The term “woods in good condition” is a term the state of Maryland uses to represent a natural state before development. Lands with “woods in good condition” capture and treat stormwater much better than typical residential land, because the ground is able to store, soak in, filter, evaporate and consume water. Therefore, the removal of healthy mature woods in good condition to construct a treatment facility that acts like woods in good condition is not a reasonable justification for woodland clearing.

2. Typically, it is uncommon and not acceptable to put stormwater management facilities in a stream valley buffer. For this project many of the proposed bioretention are within the stream valley, and in some instances within just a few feet from the Minnehaha Branch.

**Specific Minimization Recommendations**

In addition to the requirements of Chapter 22A of the County code there are specific recommendations that should be incorporated into the plan to reduce the number of specimen trees lost and the amount of forest clearing. The specific recommendations are the following:

**Station: 115.5-117.5 (north side of Goldsboro)**

**Existing Conditions:** On the northwest side of Goldsboro Road at the Rannoch Road intersection, the stream valley buffer is forested. The buffer has a mix of canopy, understory, and specimen trees.

**Proposal:** The plan proposes the removal of the existing vegetation including specimen trees and forested slopes. The limits of disturbance include the clearing of the stream buffer exceeding the construction needs of the intended sidewalk and bus stop.

**Alternative:** Reduce the limits of disturbance to 2-3 feet beyond the sidewalk/bus stop allowing for construction while protecting the adjacent slopes, forest, and specimen trees.
Station: 121.5-125 (south side of Goldsboro)

Existing Condition: This intersection contains two forest clusters on both sides of Massachusetts Avenue. Each includes a mix of understory, canopy, and large mature beech specimen trees. To the west of Massachusetts Avenue, the forest is part of a larger contiguous linear woodland containing a fox den, bird habitat, a feeder stream, a wetland, and amphibian habitat.

Proposal: The plan proposes to remove all vegetation and a wetland at the intersection of Goldsboro Road and Massachusetts Avenue for the construction of two open bioretention stormwater management facilities.

Alternative: Retain existing trees and forested areas. As alternatives to the large open bioretention areas, provide linear stormwater management along the neighboring streets to reduce runoff to Goldsboro Road. Consider utilizing porous surfaces for the sidewalks and bicycle lanes to reduce the need for these proposed bioretention facilities. Consider linear stormwater management in other non-forested locations.
Station: 128.5-131 (north side of Goldsboro)

**Existing Condition:** The forest is part of stream buffer containing large specimen trees. It provides habitat for many species, performs stormwater management services, shades and cools the Minnehaha Branch, and increases property value.

**Proposal:** The plan proposes to remove the entire forested stream buffer for the construction of 5-foot sidewalk, 20-foot bus stop, and a 6-foot cycle track.

**Alternative:** Reevaluate the need for this bus stop and relocate to reduce impacts to the forest and stream buffer.
Station: 133-131 (north side of Goldsboro)

Existing Condition: There is an existing gabion wall between the stream and Goldsboro road. At station 133.5, there is a deep aquatic fish pool containing minnows where the Minnehaha Branch crosses under Goldsboro Road.

Proposal: The 35% drawings indicate the fish pool will be filled with rip-rap eliminating the fish habitat.

Alternative: Retain existing fish pool and reduce limits of disturbance.
Community Outreach and Notification

This application was noticed in accordance with the Uniform Standards for Mandatory Referral Review. A public meeting was held on March 8, 2018 by MCDOT at Walt Whitman High School where 24 people attended. The preferred alternative to provide 5-foot wide separated bike lanes in each direction separated by a 3-foot striped buffer and flex posts space 25 to 30 feet on center was presented to the community. The overall feedback as report by the applicant was very positive with 17 of the 24 comments received expressing support for the project. Additionally, MCDOT has continuously been seeking input from stakeholders and elected officials and will continue to incorporate ideas throughout the design/build phase of the project.

Conclusion

Based on information provided by the applicant and the analysis contained in this report, staff concludes that the proposed Goldsboro Road Bicycle and Pedestrian Improvements project can be designed with some modifications to meet transportation standards; however, the current design is not compatible with its site context and does not fully meet the applicable environmental standards, guidelines, and intentions of the Bethesda-Chevy Chase Master Plan. Efforts should be made to significantly reduce the limits of disturbance to preserve individual specimen trees, forested areas, the associated stream buffer, and wetlands. Alternatives to the proposed large bioretention facilities in what is now forested areas should be considered. The proposed bicycle and pedestrian facilities will significantly improve travel along this corridor for walking and bicycling, including improving connections to existing bus stops, connections between neighborhoods along Goldsboro Road, improved pedestrian crossings at both the existing signalized crossings as well as proposed unsignalized crossings to the east of the Exxon station, between
Tulip Hill Terrace and Rannoch Drive, east of Goldleaf Drive (improvements to existing crosswalk), and west of Wedgewood Drive.

The bicycle, pedestrian and intersection improvements as proposed will be safe, adequate and efficient for all users. To minimize cost, forest loss, stormwater and stream channel impacts of this project, consider an alternative concept that includes a 10-foot-wide sidepath on one side of the road, intermittent sidewalks at bus stops on the other side of the road, and a 4-foot-wide bikeable shoulder on the eastbound side. This would reduce the total typical cross section compared to the proposed design by up to seven feet and while not consistent with the bikeway recommendation in the Bicycle Master Plan on Goldsboro Road, this alternative would be consistent with the general principles of the Bicycle Master Plan. This concept is shown in Figure 2 of the staff report.

Attachments
A. Proposed Project Plans
B. Forest Conservation Exemption Letter
C. Stormwater Management Approval Letter
D. Planning Board review of Phase I Facility Planning – Goldsboro Road
**GENERAL NOTES**

1. RIGHT OF WAY LINES ARE SHOWN FOR ASSISTANCE IN INTERPRETING PLANS: THESE LINES DO NOT REPRESENT THE OFFICIAL PROPERTY ACQUISITION LINES FOR THE COUNTY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF THE RIGHTS OF WAY LINES.

2. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE LOCATION OF INDICATIONS OF UNDERGROUND UTILITIES. ALL EXCAVATION SHOULD BE PERFORMED WITH CAUTION.

3. THE CONTRACTOR SHALL CALL "MISS UTILITY" AT LEAST 48 HOURS IN ADVANCE OF ANY EXCAVATION WORK AT 1-800-257-7777.

4. REPURPOSING OF DRAINAGE STRUCTURES OR DITCHES MAY BE MAINTAINED IN PREVIOUSLY MAINTAINED DRAINAGE CONDUITS, AS DETERMINED BY THE CONTRACTOR.

**CONSTRUCTION EQUIPMENT MUST BE KEPT OFF PUBLIC ROADS DURING CONSTRUCTION WORK.**

5. NAVIGATION THROUGH THE WATER MAINS WILL BE PERMITTED BY MVS OR DEPARTMENT OF TRANSPORTATION OFFICIALS.

6. CONSTRUCTION EQUIPMENT MUST BE KEPT OFF PUBLIC ROADS DURING CONSTRUCTION WORK.

7. NAVIGATION THROUGH THE WATER MAINS WILL BE PERMITTED BY MVS OR DEPARTMENT OF TRANSPORTATION OFFICIALS.

8. CONSTRUCTION EQUIPMENT MUST BE KEPT OFF PUBLIC ROADS DURING CONSTRUCTION WORK.

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5. NAVIGATION THROUGH THE WATER MAINS WILL BE PERMITTED BY MVS OR DEPARTMENT OF TRANSPORTATION OFFICIALS.
1. Grinding shall be performed after patching and base widening are completed.

2. Refer to Standard No. 8580 and No. 8584 for patching.

3. Refer to Standard No. 8580 for full-depth patching.

4. In areas where the existing pavement is being removed, the limit of Class 1 excavation shall be at the bottom of the sound materials in the existing pavement or at the top of subgrade, whichever is lower.

5. For wedge-shaped layer 2" thick or less:
   - Use Variable Depth Superpave Asphalt Mix 9.5 mm for Medisubgrade.
     PM: 64-22, Level 3
     Min 1" and Max 2" Lifts

6. For wedge-shaped layer more than 2" thick:
   - Use Variable Depth Superpave Asphalt Mix 9.5 mm for Medisubgrade.
     PM: 64-22, Level 4
     Min 2" and Max 4" Lifts

7. Refer to Standard No. 8655 for the Hiker/Biker Trail.

8. Refer to Standard No. 8656 for sidewalks.

9. The thickness of the gradated aggregate base course may be increased based on field conditions such that the longitudinal joint at which the existing pavement section will meet the new widened section provides proper subgrade drainage.
PEDESTRIAN AND BICYCLE IMPROVEMENTS
GOLDSBORO ROAD

LIMIT OF WORK
GOLDSBORO ROAD PEDESTRIAN AND BICYCLE IMPROVEMENTS STA. 161+20.95

EXISTING GROUND

PROPOSED P.G.L.

ELEV. 259.37
+3.93% -0.89%
L = 145.00'
K = 30

ELEV. 256.11
-0.89% +5.71%
L = 330.16'
K = 50
C = 2.73'

281.97

PVT STA. 153+76
ELEV. 258.73

PV C STA. 155+03
ELEV. 257.59

PV T STA. 158+33
ELEV. 265.54

MD 190 (RIVER ROAD)

MILLWOOD ROAD

DS = 35 MPH

ELEV. 258.85

HIGH POINT STA. 153+49

LOW POINT STA. 155+48 ELEV. 257.39

SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'

AS SHOWN

LIMIT OF WORK
GOLDSBORO ROAD PEDESTRIAN AND BICYCLE IMPROVEMENTS STA. 161+20.95

DEPARTMENT OF TRANSPORTATION
MONTGOMERY COUNTY
ROCKVILLE, MARYLAND

ENGINEERS    CONSTRUCTION MANAGERS    PLANNERS    SCIENTISTS

www.rkk.com
81 MOSEHR STREET    BALTIMORE, MD 21217
PH: (410) 728-2900
FAX: (410) 728-3160

DATE
BY
NO.
REVISION

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

OWNER/ADDRESS:

DATE

DIVISION OF TRANSPORTATION ENGINEERING
240-777-7220

DATE

DIVISION OF TRANSPORTATION ENGINEERING

DATE

CONTACT:

DATE

DEPARTMENT OF TRANSPORTATION
MONTGOMERY COUNTY
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

DATE

DIVISION OF TRANSPORTATION ENGINEERING
240-777-7220

DATE

DIVISION OF TRANSPORTATION ENGINEERING

DATE

DIVISION OF TRANSPORTATION ENGINEERING

PLAN VIEW DOES NOT MATCH ORIENTATION OF HIGHWAY PLANS

DEVELOPED ELEVATION

REFERENCE NOTES:
1. FOR GENERAL NOTES, SEE DWG. TG-01.
2. FOR HIGHWAY TYPICAL SECTIONS, SEE DWG. TS-01 AND TS-02.
3. FOR SOLDIER PILE WALL TYPICAL SECTIONS AND DETAILS, SEE DWG. RWDET-1.
4. FOR GENERAL NOTES, SEE DWG. SGN-1.

DRAWN BY
CHECKED BY
RECOMMENDED FOR APPROVAL
APPROVED

SCALE: 1" = 10'-0"

DEPARTMENT OF TRANSPORTATION
MONTGOMERY COUNTY
ROCKVILLE, MARYLAND
DIVISION OF TRANSPORTATION ENGINEERING
AND BICYCLE IMPROVEMENTS
GOLDSBORO ROAD PEDESTRIAN
AND BICYCLE IMPROVEMENTS
MACONHEAD ROAD TO GLEN ECHO ROAD
GENERAL PLAN AND ELEVATION

Rummel, Klepper & Kahl,
SUITE 500
700 E. PRATT ST, BALTIMORE, MD 21202
PH: (410) 728-2900
FAX: (410) 728-3160
LLP

DATUM EL. 180.00

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION ROCKVILLE, MARYLAND

GOLDSBORO ROAD (MD 614)
CONSTRUCTION
WATER
EXISTING
HYDRANT
EXISTING
TRAVEL LANE
12'-0" EXIST.

STA. 117+29.37
EL. 197.26
END RW3

STA. 117+77.30
EL. 196.46

STA. 116+50.37
BEGIN RW3

31'-8" 31'-8"

FACE OF PROPOSED CURB
FACE OF EXISTING CURB

177°50'56"

CONCRETE FINISH
1" TEXTURED

CONC. WALL (FASCIA)
10" CAST-IN-PLACE (TYP.)

24" CAISSON

SIDEWALK
5'-0" EXIST.

CURB & SIDEWALK
5'-8" - PROP.

CYCLE TRACK
6'-0" PROP.

BUFFER
3'-0" PROP.

TRAVEL LANE
VARIES - PROP.

PROP. MEDIAN
8'-0"

SIDEWALK
5'-0" EXIST.

TO BE REMOVED EXISTING WALL
TO BETHESDA ELECTRIC
EXISTING

TO GLEN ECHO ELECTRIC
EXISTING

WATER
EXISTING

GAS
EXISTING

ELECTRIC
EXISTING

WATER
EXISTING

WATER
EXISTING

17'-6"
5 DRAIN SPACES AT 20'-0" = 100'-0"
9'-6"

PILE SPACES @ 6'-0" = 126'-0"

SOLDIER PILE WALL (MEASURED ALONG FRONT SIDE OF WALL)
127'-0" STRUCTURE RW3

GROUND LINE
EXISTING
PROPOSED STORM STRUCTURE RW3

ELECTRIC
EXISTING

LIGHT (TYP.) PROPOSED (TYP.)

1. FOR GENERAL NOTES, SEE DWG. TG-01.
2. FOR HIGHWAY TYPICAL SECTIONS, SEE DWG. TS-01 AND TS-02.
3. FOR SOLDIER PILE WALL TYPICAL SECTIONS AND DETAILS, SEE DWG. RWDET-1.
4. FOR GENERAL NOTES, SEE DWG. SGN-1.
SEQUENCE OF CONSTRUCTION

SOIL NAIL WALL
1. Excavate Soldier Pile to the first level of soil nails.
2. Install soldier pile and tiebacks.
3. Install wall drain and reinforcing.
4. Excavate Soldier Pile to the second level of soil nails.
5. Install wall drain and reinforcing.
6. Excavate Soldier Pile to the third level of soil nails.
7. Install wall drain and reinforcing.
8. Excavate Soldier Pile to the fourth level of soil nails.
9. Install wall drain and reinforcing.
10. Excavate Soldier Pile to the fifth level of soil nails.
11. Install wall drain and reinforcing.
12. Excavate Soldier Pile to the sixth level of soil nails.

SOLDIER PILE WALL
1. Drill 24" dia. hole to elevation required.
2. Install reinforcing cage for concrete caisson.
3. Install steel soldier pile rings.
4. Place concrete caisson to required elevation.
5. Full depth soil nails with fill to the cutoff elevation at cut sections.
6. Cut off flexible wall as required to start placement of first panel after excavation.
7. Continue to excavate soil and full cut flexible wall as required to allow first cut to clear soil between soldier piles and to allow placement of second layer of soil nails to elevation required at cut sections.
8. Place lagging at fill sections, place separate cut of flexible wall at fill sections.
9. Install pre-dug excavated area of fill and concrete lagging with #1 steel.
10. Install trench drains and prefabricated trench drain system and excavation is no more than 2'-0" below level of the trench. See special provisions.
11. Install drain board and PVC pipes.
12. Place base stone, pour leveling pad and cast concrete, alternate panels may be poured at the same time, keep joints no more than 18" between adjacent panels.

REFERENCE NOTES:
1. FOR GENERAL NOTES, SEE DWG. SGN-1.
2. FOR GENERAL PLAN AND ELEVATION, SEE DWGS. RW1-1 THRU RW5-1.
3. FOR ROADWAY TYPICAL SECTIONS, SEE DWG. TS-01 AND TS-02.
**REPAIR NOTES:**

1. Remove the upstream headwall, the top slab of the culvert to sound concrete, a minimum of 4 linear feet, the tops of the existing and new existing walls to sound concrete to make the grade of the top slab and install the upstream culvert extension.

2. Remove any unsound concrete in the remaining concrete of the top slab. Patch the void with concrete, clean and remove the discolored concrete at the remaining full-width crack on the underside of the top slab and seal the cracks with a permeable sealant.

3. Remove any unsound concrete around the slab, at the top of the new wall and patch the area with concrete.

4. Fill in the area of undermining present along the south end of the new wall with grout chips.

5. Before the large spall of the downstream end of the culvert and sidewalks, any cracks and the top of the wing wall will be cut; remove the concrete, clean the sides and top of the wing wall and seal the area, repair the area as per the structural recommendations.

6. Clean the crack between the slab and top of the wing wall and seal the area.

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62. Clean the crack between the slab and top of the wing wall and seal the area.
REFERENCE NOTES:
1. FOR GENERAL NOTES, SEE DWG. SGN-1.
2. FOR GENERAL NOTES AND CONDITIONAL SECTION, SEE DWG. SGN-2.
REFERENCE NOTES:
1. FOR SECTION A-A, SEE DWG. S3-3.
2. FOR GENERAL PLAN AND ELEVATION, SEE DWG. S3-1.
3. FOR GENERAL NOTES, SEE DWG. S3-4.

NOTE:
BACKWALL TO BE POURED AFTER THE SUPERSTRUCTURE HAS BEEN REIGNED AND HEIGHTS ADJUST AS NECESSARY TO ACCOMMODATE SUPERSTRUCTURE DESIGN.
3. MD 104.03-01 TO MD 104.03-18

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA)

1. INSTALL PHASE 3A EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLANS.

2. PHASE 3A: IN AN UPSTATION DIRECTION UTILIZING TTCTA LISTED ABOVE FOR WORK WITHIN THE ROAD. CONSTRUCT CURB AND GUTTER, SIDEWALK AND PEDESTRIAN RAMPS; TRAFFIC BARRIER; INSTALL LIGHTING; AND GRADING.

3. REMOVE PHASE 3A TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.

4. INSTALL PHASE 3B EROSION AND SEDIMENT CONTROL DEVICES AS INDICATED ON PLANS REFER TO TTCTA FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. PLACEMENT OF TYPICAL TEMPORARY MARKINGS AS INDICATED ON THE PLANS WILL BE NEEDED TO ALLOW FOR TRAFFIC MOVEMENT IN SUBSEQUENT PHASES.

5. INSTALL PHASE 3B EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLANS.

6. REMOVE PHASE 3B TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.

7. INSTALL PHASE 3C EROSION AND SEDIMENT CONTROL DEVICES AS INDICATED ON PLANS REFER TO TTCTA FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. PLACEMENT OF TYPICAL TEMPORARY MARKINGS AS INDICATED ON THE PLANS WILL BE NEEDED TO ALLOW FOR TRAFFIC MOVEMENT IN SUBSEQUENT PHASES.

8. INSTALL PHASE 3C EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLANS.

9. REMOVE PHASE 3C TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.

10. INSTALL PHASE 3D EROSION AND SEDIMENT CONTROL DEVICES AS INDICATED ON PLANS REFER TO TTCTA FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. PLACEMENT OF TYPICAL TEMPORARY MARKINGS AS INDICATED ON THE PLANS WILL BE NEEDED TO ALLOW FOR TRAFFIC MOVEMENT IN SUBSEQUENT PHASES.

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12. REMOVE PHASE 3D TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.

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14. INSTALL PHASE 3E EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLANS.

15. REMOVE PHASE 3E TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.

16. INSTALL PHASE 4A EROSION AND SEDIMENT CONTROL DEVICES AS INDICATED ON PLANS REFER TO TTCTA FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. PLACEMENT OF TYPICAL TEMPORARY MARKINGS AS INDICATED ON THE PLANS WILL BE NEEDED TO ALLOW FOR TRAFFIC MOVEMENT IN SUBSEQUENT PHASES.

17. INSTALL PHASE 4A EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLANS.

18. REMOVE PHASE 4A TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.

19. INSTALL PHASE 4B EROSION AND SEDIMENT CONTROL DEVICES AS INDICATED ON PLANS REFER TO TTCTA FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. PLACEMENT OF TYPICAL TEMPORARY MARKINGS AS INDICATED ON THE PLANS WILL BE NEEDED TO ALLOW FOR TRAFFIC MOVEMENT IN SUBSEQUENT PHASES.

20. INSTALL PHASE 4B EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLANS.

21. REMOVE PHASE 4B TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.

22. INSTALL PHASE 4C EROSION AND SEDIMENT CONTROL DEVICES AS INDICATED ON PLANS REFER TO TTCTA FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. PLACEMENT OF TYPICAL TEMPORARY MARKINGS AS INDICATED ON THE PLANS WILL BE NEEDED TO ALLOW FOR TRAFFIC MOVEMENT IN SUBSEQUENT PHASES.

23. INSTALL PHASE 4C EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLANS.

24. REMOVE PHASE 4C TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.

25. INSTALL PHASE 4D EROSION AND SEDIMENT CONTROL DEVICES AS INDICATED ON PLANS REFER TO TTCTA FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. PLACEMENT OF TYPICAL TEMPORARY MARKINGS AS INDICATED ON THE PLANS WILL BE NEEDED TO ALLOW FOR TRAFFIC MOVEMENT IN SUBSEQUENT PHASES.

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29. INSTALL PHASE 4E EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLANS.

30. REMOVE PHASE 4E TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.

31. INSTALL PHASE 5A EROSION AND SEDIMENT CONTROL DEVICES AS INDICATED ON PLANS REFER TO TTCTA FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. PLACEMENT OF TYPICAL TEMPORARY MARKINGS AS INDICATED ON THE PLANS WILL BE NEEDED TO ALLOW FOR TRAFFIC MOVEMENT IN SUBSEQUENT PHASES.

32. INSTALL PHASE 5A EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLANS.

33. REMOVE PHASE 5A TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.
SEQUENCE OF CONSTRUCTION (CONT'D.)

PHASE II: PHASE 5A ON PLANS

1. REMOVE PHASE 4B TEMPORARY TRAFFIC CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.
2. INSTALL PHASE 5A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP 104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 5A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD NO. 104.03.02.0.
3. INSTALL PHASE 5A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS. REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 5A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.

PHASE III: PHASE 5A ON PLANS

1. REMOVE PHASE 5A TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.
2. INSTALL PHASE 5A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP 104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 5A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD NO. 104.03.02.0.
3. INSTALL PHASE 5A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS. REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 5A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.

PHASE IV: PHASE 5B ON PLANS

1. INSTALL PHASE 5B TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP 104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS.
2. INSTALL PHASE 5B TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP 104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS.
3. INSTALL PHASE 5B TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS. REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 5B SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.

PHASE V: PHASE 4B ON PLANS

1. REMOVE PHASE 4B TEMPORARY TRAFFIC CONTROL DEVICES, EROSION AND SEDIMENT CONTROL DEVICES AND SIGNS THAT ARE NO LONGER NEEDED.
2. INSTALL PHASE 4B TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP 104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS.
3. INSTALL PHASE 4B TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP 104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS.
4. INSTALL PHASE 4B TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS. REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 4B SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.

PHASE VI: PHASE 4A ON PLANS

1. INSTALL PHASE 4A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP 104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS.
2. INSTALL PHASE 4A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 4A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.
3. INSTALL PHASE 4A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS. REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 4A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.

PHASE VII: PHASE 3A ON PLANS

1. INSTALL PHASE 3A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP 104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS.
2. INSTALL PHASE 3A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 3A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.
3. INSTALL PHASE 3A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS. REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 3A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.

PHASE VIII: PHASE 2A ON PLANS

1. INSTALL PHASE 2A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP 104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS.
2. INSTALL PHASE 2A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 2A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.
3. INSTALL PHASE 2A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS. REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 2A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.

PHASE IX: PHASE 1A ON PLANS

1. INSTALL PHASE 1A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP 104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS.
2. INSTALL PHASE 1A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 1A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.
3. INSTALL PHASE 1A TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS. REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 1A SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.

PHASE X: PHASE 0 ON PLANS

1. INSTALL PHASE 0 TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP 104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS.
2. INSTALL PHASE 0 TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 0 SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.
3. INSTALL PHASE 0 TEMPORARY TRAFFIC CONTROL DEVICES AS INDICATED ON PLANS. REFER TO SP104 FOR TEMPORARY LANE AND SHOULDER CLOSURE RESTRICTIONS. INSTALL PHASE 0 SIGNS AS INDICATED ON PLANS AND IN ACCORDANCE WITH STD. NO. 104.03.02.0.
TRAFFIC CONTROL - PHASE 2A
1. The permittee shall notify the Department of permits, services, and other required inspections prior to commencing construction.

2. The permittee shall obtain permits from the appropriate authorities for any work to be performed.

3. The permittee shall provide equipment and personnel necessary for the protection of the environment.

4. The permittee shall comply with all applicable laws, regulations, and standards for the protection of the environment.

5. The permittee shall notify the Department of any changes or deviations from the approved plan.

6. The permittee shall be responsible for addressing any issues related to erosion and sediment control.

7. The permittee shall apply sod, seed, and anchored straw mulch, or other approved materials as necessary to ensure continued stabilization.

8. The permittee shall construct all erosion and sediment control measures per the approved plan.

9. The permittee shall have the plan and construction sequence reviewed and approved by the Department.

10. The permittee shall have the plan and construction sequence approved by the Department before any land disturbing activity.

11. The permittee shall have the plan and construction sequence reviewed and approved by the Department before any land disturbing activity.

12. Sediment control devices shall be removed, with permission of the Department, within this time period as well.

13. Sediment control devices shall be converted to the permanent configuration within this time period as well.

14. The permittee shall install a splashblock at the bottom of each downsput unless the property is converted to the permanent configuration within this time period as well.

15. Erosion or sediment control measures without prior permission from the Department.

16. Erosion or sediment control measures shall be stabilized at the end of each work day. Construction in or crossing of any stream shall be suspended at the end of each work day.

17. The permittee shall apply sod, seed, and anchored straw mulch, or other approved materials as necessary to ensure continued stabilization.

18. The sediment control inspector has the option of requiring additional erosion and sediment control measures, as necessary.

19. All trap elevations are relative to the outlet elevation, which must be on existing undisturbed ground.

20. Vegetative stabilization shall be performed in accordance with the standards and specifications for soil erosion and sediment control.

21. Erosion or sediment control measures shall be suspended and backwater will be maintained in accordance with existing permanent configuration.

22. Erosion or sediment control measures shall be suspended and backwater will be maintained in accordance with existing permanent configuration.

23. Only trees and shrubs approved by the Department shall be removed.

24. No excavation in the areas is permitted unless their location has been determined in the field with approval from the engineer and county.

25. The limits of disturbance must be field marked prior to clearing of trees, installation of structures, or establishment.

26. The Department, shall be required to hold a pre-construction meeting between them or their agents and the permittee.

27. The permittee must notify the Department of all utility construction activities with the permitted area.

28. The permittee shall apply sod, seed, and anchored straw mulch, or other approved materials as necessary to ensure continued stabilization.

29. The permittee shall construct all erosion and sediment control measures per the approved plan.

30. The permittee shall have the plan and construction sequence reviewed and approved by the Department before any land disturbing activity.

31. The permittee shall have the plan and construction sequence reviewed and approved by the Department before any land disturbing activity.

32. The permittee shall apply sod, seed, and anchored straw mulch, or other approved materials as necessary to ensure continued stabilization.

33. The permittee shall construct all erosion and sediment control measures per the approved plan.

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39. The permittee shall construct all erosion and sediment control measures per the approved plan.

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41. The permittee shall apply sod, seed, and anchored straw mulch, or other approved materials as necessary to ensure continued stabilization.

42. The permittee shall construct all erosion and sediment control measures per the approved plan.

43. The permittee shall have the plan and construction sequence reviewed and approved by the Department before any land disturbing activity.

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47. The permittee shall apply sod, seed, and anchored straw mulch, or other approved materials as necessary to ensure continued stabilization.

48. The permittee shall construct all erosion and sediment control measures per the approved plan.

49. The permittee shall have the plan and construction sequence reviewed and approved by the Department before any land disturbing activity.

50. The permittee shall apply sod, seed, and anchored straw mulch, or other approved materials as necessary to ensure continued stabilization.
IN AN EAST-WEST DIRECTION (1 EA.)

EXISTING SIGNS TO REMAIN

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PROPOSED ACCESSIBLE PEDESTRIAN PUSHBUTTONS AND SIGNS

PROPOSED SIGNS

PROPOSED LED SIGNS

EXISTING LED SIGNALS TO REMAIN

EXISTING LED SIGNALS TO BE REMOVED

NEMA PHASING

RIVER RD

GOLDSBORO RD

STATE HIGHWAY ADMINISTRATION

STATE OF MARYLAND

TRAFFIC SIGNAL PLAN

DRAWN

CHECKED BY

DESIGNED BY

CONTRACT NO.

TRAFFIC ENGINEERING DESIGN DIVISION

BETHESDA, MARYLAND

PREPARED FOR TRANSPORTATION

DEPARTMENT OF TRANSPORTATION

PRESENTED TO: W.J.NIES (FOR STS) RRZ (FOR STS)

WFW

SHA"
LEGEND

EXISTING SIGN TO REMAIN
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PROPOSED SIGN
PROPOSED GROUND MOUNTED SIGN
EXISTING GROUND MOUNTED SIGN
RELOCATED

SIGNING & PAVEMENT MARKING PLAN

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY

CONTRACT NO.
TRAFFIC ENGINEERING DESIGN DIVISION
DRAWN BY
CHECKED BY

MD 614 (GOLDSBROD ROAD) PEDESTRIAN AND BICYCLE IMPROVEMENTS
MACARTHUR BLVD TO RIVER RD

FILE:
PLOTTED:

Monday, February 12, 2018 AT 03:18 PM

Rummel, Klepper & Kahl,
700 EAST PRATT STREET    BALTIMORE, MD 21202
SUITE 500
www.rkk.com
Engineers    Construction Managers    Planners    Scientists

COUNTY
TOD NO.
REVISIONS
TIMS NO.
FAP NO.
LOGMILE
SEE TITLE SHEET

STATE HIGHWAY ADMINISTRATION
DEPARTMENT OF TRANSPORTATION
STATE OF MARYLAND

SEE OWN NO. 51-2.07
MATCHLINE
MATCHLINE - SEE OWN NO. 51-2.07

EXISTING RELOCATED
EXISTING RIGHT-OF-WAY
EXISTING RIGHT-OF-WAY

WFW
MRL
BJG
MONTGOMERY
AND BICYCLE IMPROVEMENTS
MACARTHUR BLVD TO RIVER RD

MD614 (GOLDSBROD ROAD) PEDESTRIAN AND BICYCLE IMPROVEMENTS
MACARTHUR BLVD TO RIVER RD

1"=30'
LEGEND

EXISTING SIGN TO REMAIN
EXISTING SIGN TO BE REMOVED
PROPOSED SIGN

EXISTING GROUND MOUNTED SIGN
PROPOSED GROUND MOUNTED SIGN
MD 614 (GOLDSBROD ROAD) PEDESTRIAN AND BICYCLE IMPROVEMENTS
MACARTHUR BLVD TO RIVER RD

EXISTING RIGHT-OF-WAY

DUNROBBIN DR

MACARTHUR BLVD

EXISTING RIGHT-OF-WAY

PRINCETON AVE

EXISTING RIGHT-OF-WAY

GOLDSBROD RD

MATCHLINE - SEE DKG NO. LT-034

EXISTING RIGHT-OF-WAY

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EXISTING RIGHT-OF-WAY
MD 614 (GOLDSBORD ROAD) PEDESTRIAN AND BICYCLE IMPROVEMENTS
MACARTHUR BLVD TO RIVER RD

LIGHTING PLAN

1"=30'

Rummel, Klepper & Kahl,
700 EAST PRATT STREET  BALTIMORE, MD 21202
SUITE 500
www.rkk.com

Engineers    Construction Managers    Planners    Scientists
Landscape Notes:

PSI LANDSCAPE NOTES

Landscape construction within the right of way of the Maryland State Highway Administration (SHA) shall conform to these notes for guidance regarding plan adjustments. Refer to SHA landscape design guide and SHA landscape estimating manual at http://www.roadways.maryland.gov/roads/MarylandStateHighwayAdministration.aspx.

SHA Standard Specifications:

Landscape construction shall conform to sections 701 through 706 and landscape materials shall conform to section 820 of the SHA standard specifications for construction and materials, including all revisions and supplements, as specified in these notes. These requirements shall supersede all other specifications for work within the SHA right of way, all SHA specifications for landscaping and landscape materials published in 2008, and have replaced current specifications at http://www.maryland.dot.md.us/DEPARTMENT/DESIGN/SHEDESIGN/DESIGN/ESTIMATINGMANUALS/PUBLICATIONS/ENGINEERING/DESIGN/SPECS/DESIGNMANUALS/PSI/PSILANDSCAPENSPECIFICSFORCONSTRUCTIONANDMATERIALS/35DESIGN/DESIGNNOTE/PSIPLANTINGNATIVELY/FORESTCATEGORY7.PDF.

Section 705:

Erosion and sediment control manager (ESCM):

Soil disturbance, such as grading, excavation, soil placement, or other activities that involve soil disturbance within the SHA right of way shall be supervised by an ESCM manager with a valid SHA "yellow card" in compliance with SHA 2008 specifications for construction and materials and any applicable erosion and sediment control permit.

Temporary stabilization shall be installed in conformance with section 705 to ensure that areas of soil disturbance are protected from wind, rainfall, and flowing water until permanent stabilization is installed.

1. Temporary mulch other than temporary straw mulch or temporary matting mulch shall be installed at the end of each working day to provide "same day stabilization" unless other approved stabilization is installed.

2. Temporary straw mulch shall be installed on areas and slopes flatter than 4:1. Temporary matting mulch shall be applied on slopes 4:1 and steeper and to areas within channels.

3. Temporary seed shall be installed in lieu of temporary mulch when soil disturbance is expected more than 30 days after soil disturbance, the required application rate of 20-16-12 fertilizer shall be reduced to 10 lbs per acre.

Exclusion and debris removal:

Signs related to the exclusion of livestock, horses, deer, cats, dogs, and other animals that may interfere with landscape installation or future maintenance within the SHA right of way may be excluded as necessary for their complete removal and disposal.

Soil restoration areas of pavement removal:

Soil excavation in landscaped areas shall remove excavated soils and restore the surfaces with approved soil and topsoil placed in conformance with section 705 of the SHA standard specifications.

1. A layer of approved topsoil of at least 4 inches shall be placed on all disturbed areas flatter than 3:1 and in all channels prior to seeding, sodding, or other landscaping, unless otherwise specified.

2. A layer of approved topsoil of at least 2 inches shall be placed on all disturbed areas 3:1 and steeper prior to seeding, sodding, or other landscaping unless otherwise specified. When stormwater installation facilities are proposed within slope right of way, the following note shall be added to the foreword:

3. Preservation of soil mix (SMS) and other materials installed in conjunction with SP-166 stormwater filtration facilities shall be installed in conformance with the SHA landscape notes and pertinent specifications.

Turfgrass sod establishment shall be performed in all disturbed areas along the SHA right of way within the areas indicated in the plans in conformance with section 708 of the SHA standard specifications. The required application rate of 20-16-12 fertilizer shall be reduced to 200 lbs per acre, and no fertilizer shall be applied from Nov 15 to Mar 1.

Soil stabilization matting shall be installed in conformance with section 709 of the SHA standard specifications in conjunction with turfgrass establishment per section 709 or meadow establishment per section 707 as follows:

1. Areas flatter than 1:1, type A or type D matting may be installed in lieu of straw mulch and hydromulch binder in conformance with turfgrass establishment.

2. Areas steeper than 1:1 and not flatter than 4:1, type A or type E matting shall be installed in lieu of straw mulch and hydromulch binder in conformance with turfgrass establishment unless delineated and noted otherwise on the plans.

3. Channels, stormwater management facilities, and slopes 1:1 and steeper type A soil stabilization matting shall be installed in lieu of straw mulch and hydromulch binder in conformance with turfgrass establishment unless delineated and noted otherwise on the plans.

4. Areas of meadow establishment with type B soil stabilization matting shall be installed in lieu of straw mulch and hydromulch binder within the delineated areas when channels might flow velocity or shear stress requirements for type B soil stabilization matting as defined in the "estimating manual" the area of type B shall be delineated and the following note shall be added to the foreword:

6. In high velocity channels with turfgrass establishment, type B soil stabilization matting shall be installed in lieu of straw mulch and hydromulch binder within the delineated areas.

Roadside tree plantings:

Tree removal, tree installation, tree root and branch pruning, and other regulated impacts to trees in the SHA right of way shall conform to the requirements of the roadside tree permit (RTP). The Maryland Department of Natural Resources, Division of Forest Conservation, shall provide an RTP to the Maryland Department of Natural Resources, Division of Forest Conservation, for issuance by the Department of Transportation. The required application rate of 20-16-12 fertilizer shall be reduced to 10 lbs per acre.

A plant species list is included in the plans. When stormwater management facilities, stream restoration areas, channels or other delineated areas are specified for installing meadow establishment and type D soil stabilization matting, such as the surface of infiltration facilities, the following note shall be added to the foreword:

4. In areas of meadow establishment with type D soil stabilization matting the matting shall be installed in lieu of straw mulch and hydromulch binder within the delineated areas when channels might flow velocity or shear stress requirements for type D soil stabilization matting as defined in the "estimating manual" the area of type D shall be delineated and the following note shall be added to the foreword:

5. In high velocity channels with turfgrass establishment, type D soil stabilization matting shall be installed in lieu of straw mulch and hydromulch binder within the delineated areas.

Trees and other plant material installation:

Trees, shrubs, perennials, annuals, bulblets, landscape beds, and similar materials installed in the SHA right of way shall be installed in conformance with section 709 and 711 of the SHA standard specifications. The required application rate of 20-16-12 fertilizer shall be reduced to 200 lbs per acre, and no fertilizer shall be applied from Nov 15 to Mar 1.

4. In areas of meadow establishment with type A or type D soil stabilization matting the matting shall be installed in lieu of straw mulch and hydromulch binder within the delineated areas when channels might flow velocity or shear stress requirements for type D soil stabilization matting as defined in the "estimating manual" the area of type D shall be delineated and the following note shall be added to the foreword:

Soil disturbance such as grading, excavation, soil placement or other activities that involve soil disturbance within the SHA right of way shall be supervised by an ESCM manager with a valid SHA "yellow card" in compliance with SHA 2008 specifications for construction and materials and any applicable erosion and sediment control permit.
November 21, 2018

MCDOT – Division of Transportation Engineering
c/o John B. Thomas
100 Edison Park Dr. Fourth Floor SE
Gaithersburg, MD 20878

Re: Goldsboro Road Bicycle and Pedestrian Improvements – 35% design
Forest Conservation Exemption Request and Simplified NRI/FSD No. 42019041E
Conditionally Confirmed and Approved on 11/21/2018

Dear John B Thomas:

On November 21, 2018, Development Applications and Regulatory Coordination staff of the
Montgomery County Planning Department received a revised Simplified Natural Resource Inventory /
Forest Stand Delineation “Simplified NRI/FSD” for Goldsboro Road Bicycle and Pedestrian
Improvements. The forest conservation exemption requested is for a county road construction activity.

The review of the forest conservation exemption request is complete. The project is part of the approved
Capital Improvement Program (CIP). The revised Simplified NRI/FSD submitted today, November 21,
2018, depicts a 35% design and is part of a larger Mandatory Referral county project review. This
Simplified NRI/FSD is not for construction use. The Simplified NRI/FSD shows the proposed clearing of
approximately 3.38 acres of forest including portions of forest within stream buffer. Specimen trees are
shown to be removed. Each sheet of this Simplified NRI/FSD notes how a Tree Save Plan (Chapter 22A-9 plan) will be submitted for review and approval at the time of sediment control permit.

Forest Conservation Exemption Request No. 42019041E for the Goldsboro Road Bicycle and
Pedestrian Improvements is confirmed with conditions. The revised Simplified NRI/FSD submitted
on November 21, 2018 for the project is approved with conditions.

The conditions of approval are (1) A Chapter 22A-9 Plan “Tree Save Plan” be submitted to the
Planning Department for review and approval at the time of sediment control permit. (2) The Tree Save
Plan must provide perimeter tree save measures which protect and mitigate damage to adjacent save trees
and forest. (3) The Tree Save Plan must provide reforestation (forest planting) equal to the rate of forest
cleared. (4) The standards of reforestation (forest planting) described in the Forest Conservation Law
(Chapter 22A) subsections 22A-12(e), (g) and (h), must be met on the Tree Save Plan, and (5) The
Planning Department requires onsite or nearby mitigation tree planting for the removal of specimen trees
and this mitigation planting must be shown on the Tree Save Plan.

If there are subsequent modifications to the approved Simplified NRI/FSD, a separate amendment may be
required for Planning Department review and approval prior to those activities occurring.

Sincerely,

[Signature]

Stephen Peck
Senior Planner and Inspector
Development Applications and Regulatory Coordination
M-NCPPC - Montgomery County Planning Department

CC: Sally Kishter, RK&K

8787 Georgia Avenue Silver Spring, Maryland 20910 DARC 301-495-4550 Fax: 301-495-1306
www.MontgomeryPlanning.org
February 16, 2018

Ms. Joan Wang
iDesign Engineering Inc.
12057-A Tech Rd.
Silver Spring, MD 20904

Re: COMBINED STORMWATER MANAGEMENT CONCEPT/SITE DEVELOPMENT
STORMWATER MANAGEMENT PLAN for
Request for Goldsboro Road Improvements
Preliminary Plan #: NA
SM File #: 283095
Tract Size/Zone: 21.97
Total Concept Area: 8.15
Watershed: Potomac Direct

Dear Joan:
Based on a review by the Department of Permitting Services Review Staff, the Stormwater Management Concept for the above mentioned site is acceptable. The Stormwater Management Concept proposes to meet required stormwater management goals via MicroBioretention in County ROW and a Wet Swale in SHA ROW.

The following items will need to be addressed during the detailed sediment control/stormwater management plan stage:

1. The proposed Microbioretention BMP1 for Goldsboro Rd. just West of Massachusetts Rd. is within the Montgomery County right of way and thus must be designed to Montgomery County standards. The maximum credited treatment for this practice is limited to the runoff from the 1-yr 2.6" rain event and must be computed corrected at detailed plan review.

2. The proposed Wet Swale BMP-2 for Goldsboro Rd. just East of Massachusetts Rd. is within the State right of way and thus must be designed to State standards. The practice must be designed, inspected and maintained by State Highway. The proposed practice utilized check dams, which are not acceptable for Montgomery County swales. If the ownership or maintenance responsibility of this practice change to County responsibility, the Wet Swale practice is not to be installed and the stormwater management treatment provided by this practices is waived.

3. The majority of the stormwater management target treatment of 19,050 cf. of storage is waived due to site constraints and high ground water elevations.

4. A detailed review of the stormwater management computations will occur at the time of detailed plan review.

5. An engineered sediment control plan must be submitted for this development.

6. All filtration media for manufactured best management practices, whether for new development or redevelopment, must consist of MDE approved material.
This list may not be all-inclusive and may change based on available information at the time.

This letter must appear on the sediment control/stormwater management plan at its initial submittal. The concept approval is based on all stormwater management structures being located outside of the Public Utility Easement, the Public Improvement Easement, and the Public Right of Way unless specifically approved on the concept plan. Any divergence from the information provided to this office; or additional information received during the development process; or a change in an applicable Executive Regulation may constitute grounds to rescind or amend any approval actions taken, and to reevaluate the site for additional or amended stormwater management requirements. If there are subsequent additions or modifications to the development, a separate concept request shall be required.

If you have any questions regarding these actions, please feel free to contact Bill Musico at 240-777-6340.

Sincerely,

Mark C. Etheridge, Manager
Water Resources Section
Division of Land Development Services

MCE: me WJM
cc: C. Conlon
SM File # 283045

ESD: Required/Provided 19,050 cf / 4,152 cf
PE: Target/Achieved: 1.8"/0.3"
STRUCTURAL: 0.0 cf
September 26, 2014

Arthur Holmes, Jr. Director
Montgomery County Department of Transportation
1010 Monroe Street, 10th Floor
Rockville, Maryland 20850

RE: Goldsboro Road Pedestrian and Bicycle Improvements Project Phase I Facility Planning

Dear Mr. Holmes,

The Planning Board reviewed the Project Prospectus for the Goldsboro Road Pedestrian and Bicycle Improvements project on September 18, 2014, and made the following recommendations:

1. The Goldsboro Road Bicycle and Pedestrian Improvements project should proceed to Phase II of the facility planning process to develop a detailed design for the completion of the Preferred Alternative (#2).

2. MCDOT should conduct a future facility planning study to further evaluate ways to reconfigure the intersection of MacArthur Boulevard and Goldsboro Road to simplify pedestrian and bicycle crossing movements and improve the operation and safety for all intersection users.

Thank you for your attention to this matter. If you have any questions or comments concerning our review, please contact David Anspacher 301-495-2191.

Sincerely,

Casey Anderson
Chair