Ultra-thin Bonded Wearing Course (UTWBC)

- Get the scoping sheet
  - This will give you an idea of the expectation of the project when it was scoped in the spring for the following year – Team is Brian L, Scott B, Sr PM in Region, RE, Anne Carter
  - Can point out areas of added work – guardrail, shoulder rehab, treatment width, etc.
  - Typically avoid urban sections
  - Crack seal expected. Maybe crack repair. Should show in scope

- Get the as-built typicals
  - Determine lane and shoulder widths – put back what was built and not necessarily what the stripe is at
  - We preserve to the as-build standards; not the Design Manual standards
  - E-Plan Archive is a good starting point. Karen Gross Karen.Gross@Maine.gov may be able to help if you can't find anything

- Review ASAP run (optional) and field check with string
  - Determine existing rut depth
  - Highlight areas with greater than ¾” rut – this can help determine if you need a spot shim

- Pavement removal
  - Typically full travel lane width (see scoping sheet)
  - Pick a consistent width
    - Don’t worry about removing old white stripe – fog seal will cover if currently too wide
    - Try to get joint crack if present – pick a consistent width for a long stretch – long is not defined but 1/2 mile + stretches seems reasonable
  - If you have identified shim areas, plan to mill wider and deeper to accommodate the shim – identify approximate locations and tonnage in Construction Notes
  - String into bridge joint to improve ride
  - Weepers milling and paving incidental

- Guardrail (See Guardrail Policy)
  - If functioning and not high accident location, ok to keep – MELTs, BCTs, low volume ends or twisted ends need to be replaced
  - Don’t rely on M&O to fix
  - Look at each end in the field for damage/replacement – if one a small issue can do a contract mod to fix
  - Point of Need – not a consideration unless a history of accidents
  - Remove winter sand under guardrail where needed

- Americans with Disabilities Act (ADA)
  - See latest ADA policy – changes often. Check latest policy for current rules Highway website
  - Plan on upgrading all landings

- Shim – Throw in a token amount unless you have identified needed areas
- Fog seal shoulders
Scope Expectations

- Don’t skip unless major intersection
- Add “Black Beauty” item for high traffic intersections
- Protect catch basins and paved drives
  - Temp Stripe – Figure two applications on the UTWBC surface; one on milled surface (may not be all lines)
  - Perm Stripe
    - Figure one application if on Interstate or inside Urban Compact. If part in and part out figure permanent for entire contract.
    - If outside compact, M&O will stripe – contact Wayne Arsenault Wayne.Arsenault@Maine.gov and Dennis Robertson Dennis.Robertson@Maine.gov – send Stripping Form to them before advertisement
  - Hand Paint
    - Plan to reproduce existing
    - New standard for crosswalks is piano keys – lines for temp ok
    - Work with Region Traffic Engineer on legal/illegal crosswalk questions
    - ONLY – used in “trapped” lanes
  - Equipment Rental
    - Typically 20 HR +/- APE per mile – double truck. No other unless identified work
    - Don’t plan on doing everything – get the worst areas to improve drainage
    - If full width will need to back up shim layer
    - Scoping sheet will give better idea
  - We don’t look at Drainage (except for basin adjustments if required)
  - Hand Placed HMA – may be needed in full width areas
  - If we are requiring night work, discuss with municipality before PS&E
Scope Expectations

- **3/4" Overlay**
  - Get the scoping sheet
    - This will give you an idea of the expectation of the project when it was scoped in the spring for the next year – Same team as UTBWC
    - Can point out areas of added work – guardrail, shoulder rehab, treatment width, etc.
  - Get the as-built typicals
    - Determine lane and shoulder widths
    - Determine As-Built condition of superelevations
    - Consider utilizing as-built stationing to line up transitions easier
    - We preserve to the as-build standards; not the Design Manual standards
    - E-Plan Archive is a good starting point. Karen Gross
      Karen.Gross@Maine.gov may be able to help if you can't find anything
  - Analyze the shim in ASAP run
    - Field check transitions to make sure they line up
    - Figure 3/8” minimum shim
    - Shim at least 4’ into shoulder – full width if in poor condition
    - Try to roughly identify spot shim quantity and locations
    - See Cross-Slope Policy for expectations and exception process
    - String into bridge joint to improve ride
  - Driveways
    - Don’t figure woods and field entrances – even if paved
    - Figure butt joints for all paved drives – 18” minimum
    - 3’ lips with 411.10 behind for gravel drives
  - Sideroads
    - Match at old joint – don’t leave gap
    - If no obvious joint, match at 10 to 15’ +/-
    - 6’ lip on gravel sideroads
  - Guardrail (See Guardrail Policy)
    - If functioning and not high accident location, ok to keep – MELTs, BCTs, low volume ends or twisted ends need to be replaced
    - Don't rely on M&O to fix
    - Look at each end in the field for damage/replacement – if one a small issue can do a contract mod to fix
    - Point of Need – not a consideration unless a history of accidents
    - Remove winter sand under guardrail where needed
  - Americans with Disabilities Act (ADA)
    - See latest ADA policy – changes often. Check latest policy for current rules on Highway website
    - Upgrade all required areas
  - Temp Stripe – Figure one application on shim and one on surface
  - Perm Stripe
    - Figure one application if on Interstate or inside Urban Compact. If part in and part out figure permanent for entire contract
    - If outside compact, M&O will stripe – contact Wayne Arsenault
      Wayne.Arsenault@Maine.gov and Dennis Robertson
Dennis.Robertson@Maine.gov – send Striping Form to them before advertisement

- Hand Paint
  - Plan to reproduce existing
  - New standard for crosswalks is piano keys – lines for temp ok
  - Work with Region Traffic Engineer on legal/illegal crosswalk questions
  - ONLY – used in “trapped” lanes

- Equipment Rental
  - Typically 30 HR +/- APE per mile – double truck. No other unless identified work
  - Don’t plan on doing everything – get the worst areas
  - Need to back up shim layer
  - Scoping sheet will give better idea

- We don’t look at Drainage (except for basin adjustments if required)
Scope Expectations

1 1/4" or Heavier Overlay

- Get the scoping sheet
  - This will give you an idea of the expectation of the project when it was scoped – typically three years before
  - Can point out areas of added work – guardrail, shoulder rehab, treatment width, etc.

- Get the as-built typicals
  - Determine lane and shoulder widths
  - Determine As-Built condition of superelevations
  - Determine cross pipe locations and outlet pipes
  - Determine Typical template
  - Strongly consider utilizing as-built stationing to line up transitions and pipes easier
  - We preserve to the as-build standards; not the Design Manual standards

Drainage

- Look at all cross pipes – if will last 7-10 years do nothing
- Try to find all outlet pipes and evaluate – if you can't find add construction note to equipment rental and approximate station to try to find during construction or try to get M&O to help
- Check catch basins for:
  - Correct grate
  - Correct elevation after surface
  - Condition – rebuild?
- Check with local DOT crew (municipality inside compact) to see what if any issues they have had maintaining

- Analyze the shim in ASAP run
  - Field check transitions to make sure they line up
  - Figure 3/8” minimum shim
  - Shim at least 4’ into shoulder – full width if in poor condition
  - Try to roughly identify spot shim quantity and locations
  - See Cross-Slope Policy

Driveways

- Don’t figure woods and field entrances unless paved already
- Figure butt joints for all paved drives – 18” minimum
- 3’ lips with 411.10 behind for gravel drives
- 411.10 for woods and field entrances

Sideroads

- Match at old joint – don’t leave gap
- If no obvious joint, match at 20 to 30’ +/-
- 6’ lip on gravel sideroads

Guardrail (See Guardrail Policy)

- If functioning and not high accident location, ok to keep – MELTs, BCTs, low volume ends, or twisted ends need to be replaced
- Don’t rely on M&O to fix
- Look at each end in the field for damage/replacement – if one a small issue can do a contract mod to fix
Scope Expectations

- Point of Need – not a consideration unless a history of accidents
- Remove winter sand under guardrail where needed
  - Equipment Rental
    - Typically 40 to 60 HR +/- per mile double truck – Can go by the foot but you will need a special detail
    - Goal is to restore as-built template down to subgrade break
    - Need to back up shim layer
    - Scoping sheet will give better idea
  - Other
    - Look at curb reveal and condition
    - Look to see if the area is identified as having a safety need
      - Implement low cost solutions
      - Work with safety to see if they want to fund higher cost solutions
    - Typically we don’t look at
      - Large culverts
      - Walls
  - Americans with Disabilities Act (ADA)
    - See latest ADA policy – changes often. Check latest policy for current rules on Engineering Council website
    - Upgrade all required areas
  - Environmental
    - All potential impacts identified and PIS submitted by June the year prior to delivery
  - Other policies to be aware of
    - Local Cost Sharing Policy – For sidewalks
    - Shoulder Surface Type Policy
    - Complete Streets Policy – Road diet?
    - When is a city/state agreement is needed?
    - If we are requiring night work, discuss with municipality before PS&E. Make them aware that night work may be possible even if day work
  - Temp Stripe – Figure one application on shim and one on surface
  - Perm Stripe
    - Figure one application if on Interstate or inside Urban Compact. If part in and part out figure permanent for entire contract
    - If outside compact, M&O will stripe – contact Wayne Arsenault Wayne.Arsenault@Maine.gov and Dennis Robertson Dennis.Robertson@Maine.gov – send Striping Form to them before advertisement
  - Hand Paint
    - Plan to reproduce existing
    - New standard for crosswalks is piano keys – lines for temp ok
    - Work with Region Traffic Engineer on legal/illegal crosswalk questions
    - ONLY – used in “trapped” lanes
Scope Expectations

- Mill & Fill
  - Get the scoping sheet
    - This will give you an idea of the expectation of the project when it was scoped – typically two years before
    - Can point out areas of added work – guardrail, shoulder rehab, treatment width, etc.
  - Get the as-built typicals
    - Determine lane and shoulder widths
    - Determine As-Built condition of superelevations
    - Determine cross pipe locations and outlet pipes
    - Determine Typical template
    - Strongly consider utilizing as-built stationing to line up transitions and pipes easier
    - We preserve to the as-build standards; not the Design Manual standards
  - Drainage
    - Look at all cross pipes – if will last 7-10 years do nothing
    - Try to find all outlet pipes and evaluate – if you can't find add construction note to equipment rental and approximate station to try to find during construction or try to get M&O to help
    - Check catch basins for:
      - Correct grate
      - Correct elevation after surface
      - Condition – rebuild?
    - Check with local DOT crew (municipality inside compact) to see what if any issues they have had maintaining
  - Analyze ASAP
    - There are opportunities to correct cross slope on a mill & fill
      - See Cross-Slope Policy
  - Guardrail (See Guardrail Policy)
    - If functioning and not high accident location, ok to keep – MELTs, BCTs, low volume ends, or twisted ends need to be replaced
    - Don’t rely on M&O to fix
    - Look at each end in the field for damage/replacement – if one a small issue can do a contract mod to fix
    - Point of Need – not a consideration unless a history of accidents
    - Remove winter sand under guardrail where needed
  - Equipment Rental
    - Typically 40 HR +/- per mile – Can go by the foot but you will need a special detail
    - Goal is to restore as-built template down to subgrade break
    - Need to back up shim layer
    - Scoping sheet will give better idea
  - Other
    - Look at curb reveal and condition
    - Look to see if the area is identified as having a safety need
      - Implement low cost solutions
Scope Expectations

- Work with safety to see if they want to fund higher cost solutions
  - Typically we don’t look at
    - Large culverts
    - Walls
- Americans with Disabilities Act (ADA)
  - See latest ADA policy – changes often. Check latest policy for current rules on Engineering Council website
  - Upgrade all required areas
- Environmental
  - All potential impacts identified and PIS submitted by June the year prior to delivery
- Other policies to be aware of
  - Local Cost Sharing Policy – For sidewalks
  - Shoulder Surface Type Policy
  - Complete Streets Policy – Road diet?
  - When is a city/state agreement is needed?
  - If we are requiring night work, discuss with municipality before PS&E. Make them aware that night work may be possible even if day work
- Temp Stripe – Figure one application on milled surface, one on shim and one on surface
- Perm Stripe
  - Figure one application if on Interstate or inside Urban Compact. If part in and part out figure permanent for entire contract
  - If outside compact, M&O will stripe – contact Wayne Arsenault Wayne.Arsenault@Maine.gov and Dennis Robertson Dennis.Robertson@Maine.gov – send Striping Form to them before advertisement
- Hand Paint
  - Plan to reproduce existing
  - New standard for crosswalks is piano keys – lines for temp ok
  - Work with Region Traffic Engineer on legal/illegal crosswalk questions
  - ONLY – used in “trapped” lanes
- Mainline only M&F
  - Fog seal shoulders
    - Don’t skip unless major intersection
    - Add “Black Beauty” item for high traffic intersections
    - Protect catch basins and paved drives
  - Pavement removal – pick a consistent width
    - Don’t worry about removing old white stripe – fog seal will cover if currently too wide
    - Try to get joint crack if present – pick a consistent width for a long stretch – long is not defined but 1/2 mile + stretches seems reasonable
    - Plan to square off or pave then remove a portion for truck lanes and turning lanes
- Full width mill & fill
Scope Expectations

- Look at curb reveal – can it be improved with additional milling?
- Plan to go into several drives
Cyclical Pavement Resurfacing (CPR)

- **Shim**
  - Limited to 500 ton/mile
  - Continuous shim
  - If bad cross section areas, look to improve
  - Identify spot shim quantity
  - ARAN not required but can be used to identify spot area

- Driveways See Roles & Responsibilities
- Sideroads See Roles & Responsibilities

Guardrail ([See Guardrail Policy](#))

- If functioning and not high accident location, ok to keep – BCT, low volume ends or twisted ends need to be replaced
- To be accomplished under M&O On-Call Guardrail contract
- Look at each end in the field for damage/replacement – if one a small issue can do a contract mod to fix
- Point of Need – not a consideration unless a history of accidents

Americans with Disabilities Act (ADA)

- [See latest ADA policy](#) – changes often. Check latest policy for current rules on Highway website
- To be accomplished in following year by regional Project Development contracts in conjunction with Theresa Savoy [Theresa.Savoy@Maine.gov](mailto:Theresa.Savoy@Maine.gov)

Temp Stripe – See Roles & Responsibilities

Perm Stripe – Done by M&O

Hand Paint

- Plan to reproduce existing
- New standard for crosswalks is piano keys – lines for temp ok
- Work with Region Traffic Engineer on legal/illega crosswalk questions
- ONLY – used in “trapped” lanes

Equipment Rental

- 5 HR +/- per mile
- Don’t plan on doing everything – get the worst areas
- Need to back up shim layer
- Remove winter sand under guardrail where needed

We don’t look at Drainage (except for basin adjustments if required) – M&O expected to replace any pipes necessary before the contractor begins construction

Not estimated for a field office
Scope Expectations

- **Pugmill (See Pugmill Roles)**
  - **Project Development**
    - Analyze ASAP (See Pugmill Guidance and Cross Slope Policy)
      - Make sure data lines up with reality
      - Identify spot shim locations
      - Identify cross slope exceptions for Program approval process
      - May possibly be able to mill some to slope to help with RAP quantity
    - Engineering Record of Decision
      - Completed by Region RE
      - Basically covers the DE process
      - Done before design work begins to give establish expectations
      - Updated regularly during the design process as questions arise
      - Needs to be finalized and submitted before PS&E
  - ADA applies
  - **Maintenance & Operations**
    - Responsible for:
      - Guardrail
      - Drainage
      - Ditching/Inslope/Backing up RAP
      - Traffic Control
    - If they desire to contract out their work, work with them to collect the field data to create the necessary bid documents for our contract
  - Priority 1 projects are considered a built road when the treatment is done – keep that in mind when estimating
Scope Expectations

- General
  o ADA
    - ADA Design Guidance gives dimensions of acceptable ramps and acceptance criteria if new or rehab
    - Information on technical feasibility (not financial feasibility)
    - Link to Standard Detail
  o ENV
    - Project Information Sheet (PIS)
      - Needs to be filled out as soon as practical and updated as often as necessary
      - Includes – paving existing gravel, extending guardrail, ADA, new curb, drainage
      - In-stream work should be identified the year before if you hope to obtain permits
      - Goes to Region ENV Coordinator
  o Bridges within project limits
    - Default treatment will be a full width 1½” mill & fill. If the bridge shoulders are in good shape, send to me to get an exception. If we do not pave the bridge shoulders with our project, we will fog them.
    - Coring may be required to determine existing HMA depth – check with Bridge M&O
    - Extraordinary bridge paving will be funded by bridge (typically 500’+). Let me know if you have this situation.
    - Overpass bridges that are accessible from our preservation project (off ramps) may be paved with our project. Funded by bridge. They will let you know if they want that work included.
    - Additional direction forthcoming – this section to be updated