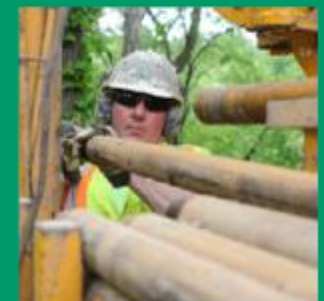


CEAO• DEER CREEK S.P., OCTOBER 18, 2017



OHIO DEPARTMENT OF
TRANSPORTATION

ODOT SYSTEM PRESERVATION/ MAINTENANCE

Thomas Lyden

ROAD MAP FOR TODAY

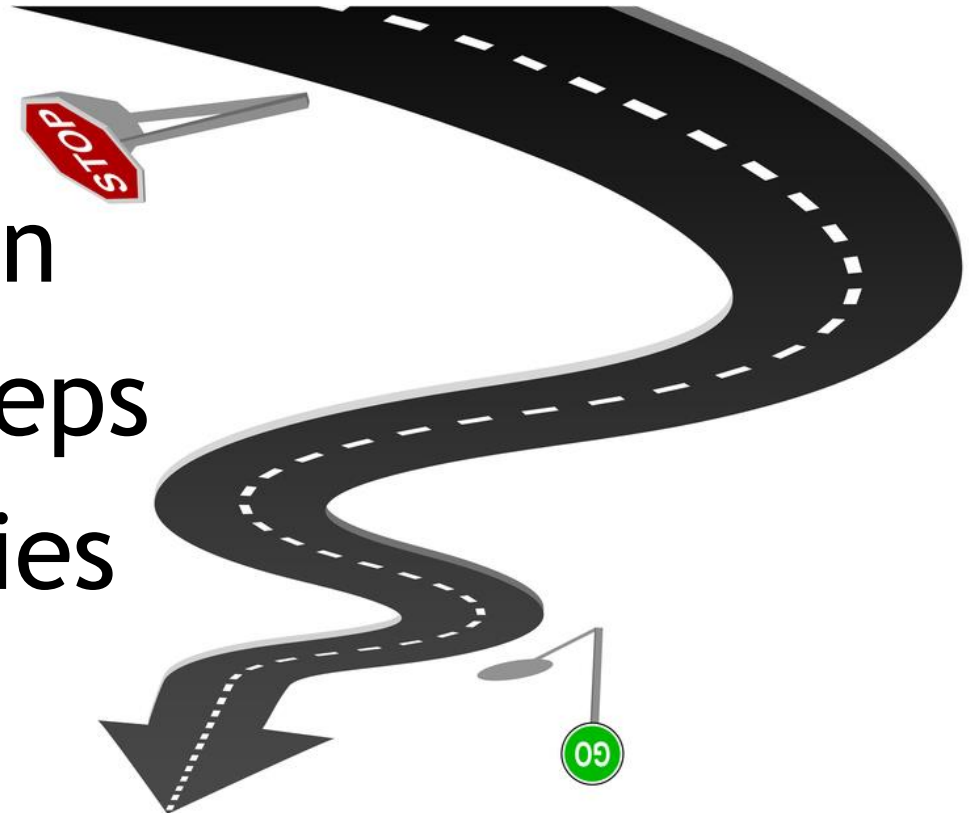
The Situation

The Solution

The Steps

The Strategies

The Summary

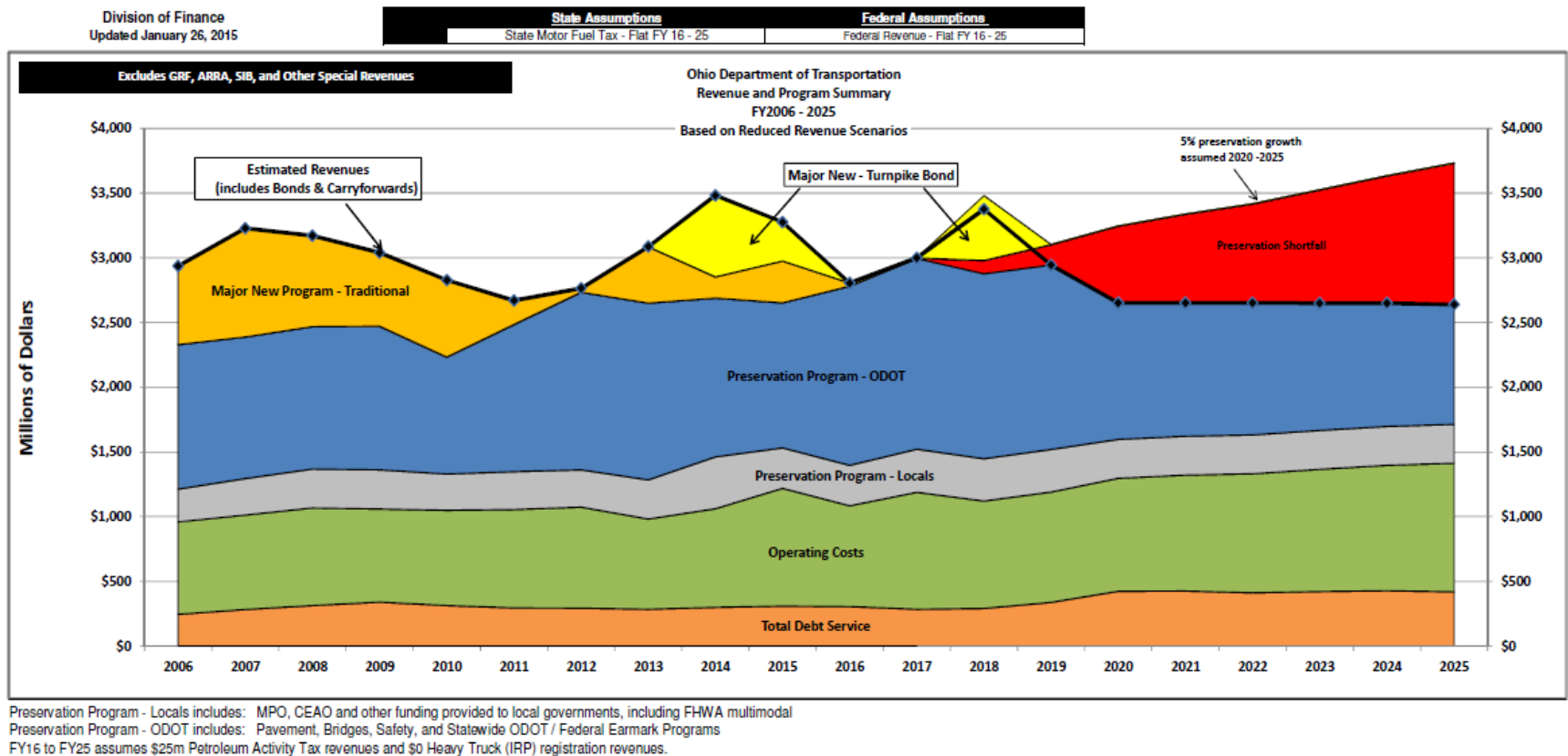


THE SITUATION

- In the past 10 years, ODOT has lost 34% of its buying power due to inflation
- No new taxes
- Potential to save over \$200M by implementing Pavement and Bridge strategies

THE SITUATION

○ Funding



THE SITUATION

- **MAP-21**
 - Strategic and systematic process
 - Operating, maintaining, upgrading and expanding assets throughout lifecycle
 - Focus on business and engineering practices
 - Better decision-making based upon quality information

THE SOLUTION

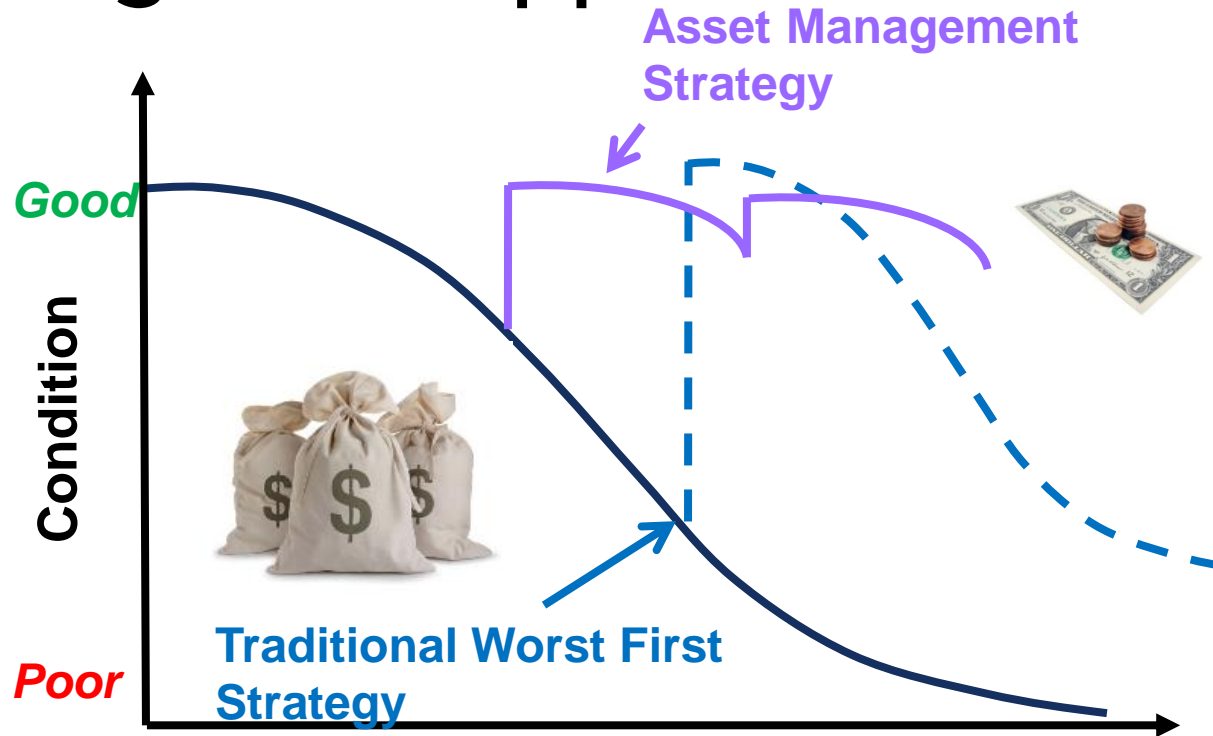


**“What if we don’t change at all ...
and something magical just happens.”**

#80913688

THE SOLUTION

○ Change the Approach



THE STEPS

- Asset Management Plan
- District Work Plan - Merge the
 - Capital Work Plan
 - Maintenance Work Plan
- Work Plan + Budget
- Increased use of Force Account
“scope of work”

ASSET MANAGEMENT PLAN

A plan for managing the assets over a period of time in order to deliver the agreed Levels-of-Service and Performance Targets in the most cost-effective way

DISTRICT WORK PLAN

- Combines
 - Capital Plan - 6 year plan
 - Operations Plan - 2 year plan
- Zero Based Budget for Operations
 - Budget is built on planned needs, not necessarily historic allocations
 - Districts present their Work Plan and Budget to Central Office team

DISTRICT WORK PLAN

- Foster consistency among districts
- Build collaborative project-selection process
- Help achieve statewide goals
- Reduce life-cycle costs of assets

DISTRICT WORK PLAN (CON'T)

- Remove distinction between “Capital Projects” and Maintenance Activities
- Coordinate preservation activities through Planning Office
- Use performance data to guide funding allocations

WORK PLAN BENEFITS

- Improved consistency in practices across districts
- Increased use of preservation treatments
- Cost-effective use of funds
- Reduction in pavement and bridge life-cycle costs

COUNTY FORCE ACCOUNT

- County 5543.19
 - Roads < \$30,000 per mile
 - Bridges/Culverts < \$100,000



ODOT FORCE ACCOUNT

- **ORC 5517.02**
 - Roads <\$ 30,000 per centerline mile
 - Projects <\$ 60,000 signal or project
- **ORC 5517.021 (Scope of Work)**
 - Pave or Patch < 120 tons/lane mile
 - Replace Bridge < 700 SF deck
 - Repair Bridge < 800 SF deck
 - Replace Culvert < 52 SF waterway opening (8' diameter)

OPERATIONS WORK PLAN

- Routine Maintenance
- Reactive Maintenance
- Ready to Pave
- Gap
- Preservation



WORK PLAN CATEGORIES

- Ready to Pave - projects done in anticipation or ahead of a capital project
- Gap - projects done to “hold” a road until the Capital Project
- Preservation - pavement and bridge strategies

OPERATIONS WORK PLAN

- Assess available staff
- Assess month/days/hours
- Enter projects
 - Location
 - Labor
 - Equipment
 - Materials
 - Schedule

FULL TIME EQUIVALENT CHART												
A	FULL TIME EMPLOYEES											
B	FULL TIME HIGHWAY TECHNICIANS											
C	LEAVES, HOLIDAY, ADMINISTRATION & OTHER INDIRECT											
D	HT TO CONSTRUCTION											
E	SUMMER STUDENTS											
F	SEASONALS											

Total numbers of ODOT Full Time employees assigned to the County
 Total number of Highway Technicians assigned to the County
 Estimated percentage of time for all Indirect activities. **This is only for HT's!**
 Estimated number of Highway Technicians that will be going to Construction.
 Estimated number of Summer Students to be assigned to the County.
 Estimated number of Seasonal Workers to be assigned to the County.

A summary of the Counties "AVAILABLE MAINTENANCE STAFF" is provided upon populating the "EMPLOYEES PER MONTH" below.
 - From this, the base number of Person Days (and Hours) for each month will be shown on the "WORK DAYS" tab.
 - Currently, all of the additions and deductions are defaulted to the months listed.

COUNTY AVAILABLE MAINTENANCE STAFF												
FY 2017												
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
A FULL TIME EMPLOYEES	0	0	0	0	0	0	0	0	0	0	0	0
B FULL TIME HIGHWAY TECHS	0	0	0	0	0	0	0	0	0	0	0	0
C Deduction for Indirect Activities	0	0	0	0	0	0	0	0	0	0	0	0
D HT TO CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0
E SUMMER STUDENTS	0	0	0	0	0	0	0	0	0	0	0	0
F SEASONALS (1000 HRS/1 EMP)	0	0	0	0	0	0	0	0	0	0	0	0
G AVAILABLE MAINTENANCE STAFF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVAILABLE MAINTENANCE STAFF (MAX)	0	0	0	0	0	0	0	0	0	0	0	0

LOCATION INFORMATION Clear LOC INFO									
Cost Center	District	County	Route	Route Code	MLF ID				
(# location)	BEG LOG	END LOG	BEGIN ROUTE	END ROUTE	BEGIN LAT	END LAT	END LONG	Left, Right, Other	
PROJECT AND WORK DESCRIPTION Clear P&W DESC									
Category*	Associated Project PID	EIMS PROJECT CATEGORY	EIMS Activity 1	Description of Work (Comments-Optional)					
RENTAL EQUIPMENT NEEDS Clear EQ NEW									
Rental Equipment	Description	Estimated Total Cost	Equipment 1	Equipment 2	Equipment 3	Equipment (Other)	Rental Equipment Cost	NEW Equipment Purchases	
MATERIALS REQUIRED Clear MT									
Material 1	Description	Estimated Total Cost	Material 2	Material 3	Material 4	Material (Other)	Material Cost	Contract Cost (101-G, 007, Purchase Order)	
TOTAL COST							\$0		

LABOR INFORMATION Clear LB									
Number of Employees needed									
8 hr Day	10 HR Day	HRS							
Days to complete work (8HR day)	Days to complete work (10HR day)	Hours to complete work	Overtime Hours to complete work	For Hours only, is this re-occurring? List number of days.	Hours				
PERSON DAYS to complete work (8 HR DAY)	PERSON DAYS to complete work (10 HR DAY)	OT	OT						
PERSON HOURS to complete work									
FY 2017 is a "Y" under the month(s) in which the work is anticipated to occur									
MONTH	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Person Day(8)									
Person Day(10)									
Overtime									
FY 2018									
MONTH	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Person Day(8)									
Person Day(10)									
Overtime									

FIND SFN using C-R-S REQUIRED OPTIONAL

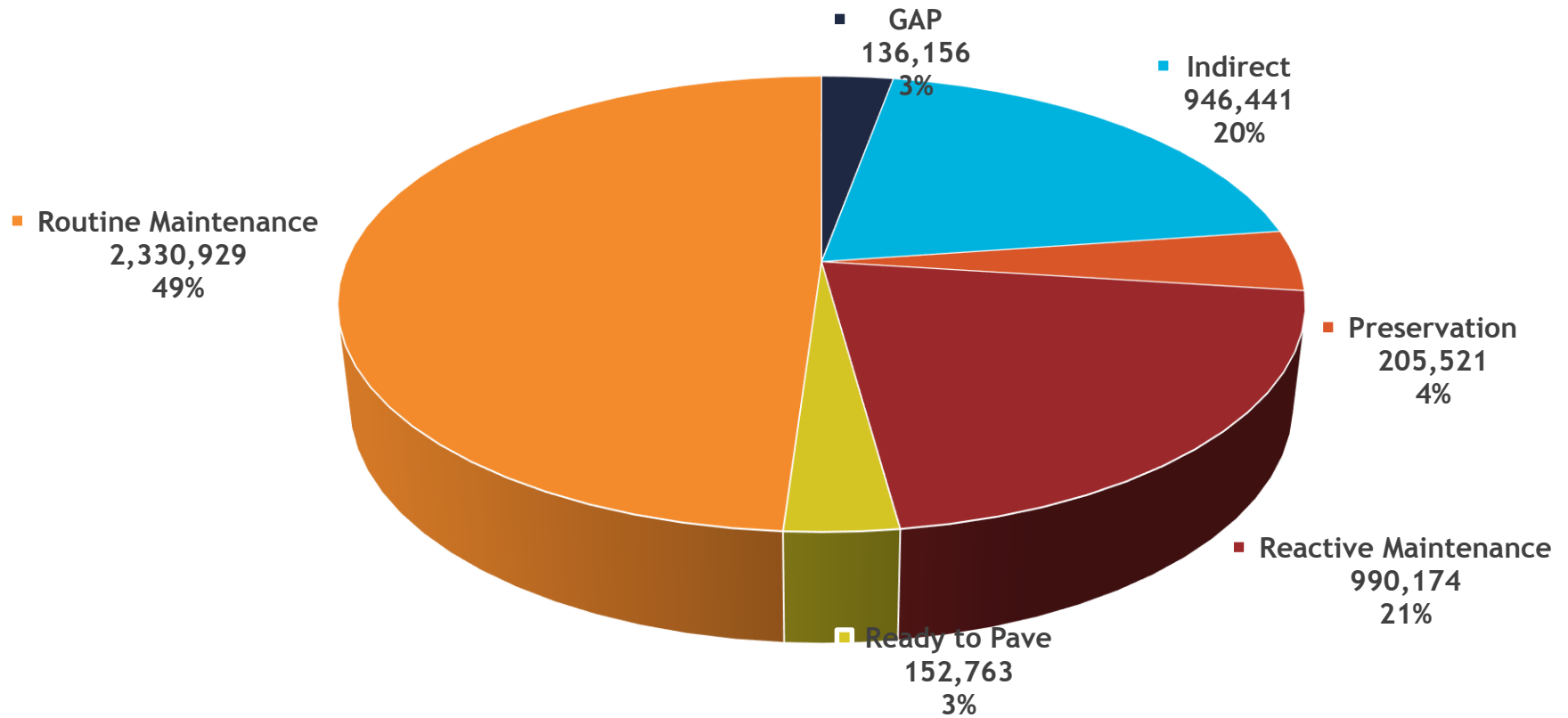
SUBMIT JOB DO YOU NEED TO EDIT AN EXISTING JOB? SELECT FROM DROP DOWN MENU

CLEAR FORM JOB #

CLICK HERE to Turn Comments Off RETRIEVE EXISTING JOB

DELETE SELECTED JOB

ANALYSIS



ISN'T THIS THE TRUTH?



PAVEMENT PRESERVATION

- Approximately 48% of ODOT's General system is eligible for Chip & Seal
- If 50% of overlay projects were Chip & Sealed, life-cycle costs will decrease resulting in yearly savings of \$75M - \$121M

THE PAVEMENT STRATEGIES

- Crack Sealing
- Underdrain Outlet Cleaning
- Chip Seal

CRACK SEALING

- What - Placement of a binder mixed with fibers into existing cracks in the pavement
- Benefit - minimize the intrusion of water into the pavement

CRACK SEALING

- When - in cool weather when the pavement has contracted and cracks are wide



UNDERDRAIN OUTLET CLEANING

- What - inspect and clean to ensure water can move freely out of the drain and away from pavement
- Benefit - functioning outlets help extend pavement life by removing excess water from the base

UNDERDRAIN OUTLET CLEANING

- When - inspect and clean every three years



UNDERDRAIN OUTLET CLEANING



CHIP SEAL

- What - sprayed application of polymer binder covered with washed aggregate
- Benefit - low cost method to improve pavement conditions at a lower overall life-cycle cost

CHIP SEAL

- When - ODOT data indicates 5-7 year life



FALLING ASLEEP VIDEO



THE BRIDGE STRATEGIES

- Sweeping Bridge Decks
- Sealing of Concrete Bridge Decks
- Cleaning Bridges

SWEEPING BRIDGE DECKS

- What - cleaning the gutter lines of bridges
- Benefit - prevent early deterioration due to chloride laden debris
- When - sweep once/year as a minimum





SEALING OF CONCRETE BRIDGE DECKS

- What - seal with Gravity-fed resin or Soluble Reactive Silicate
- Benefit - extends service life
- When - cracked decks every 10 years with GFR, hairline cracks every 5 years with SRS

CLEANING BRIDGES

- Deck Joints
- Scuppers
- Drainage Troughs
- Bridge Seats

Page 1
NPDES Permit No: OHZ000001

OHIO E.P.A.
OCT 18 2016
ENTERED DIRECTOR'S JOURNAL

Issuance Date: October 18, 2016
Effective Date: October 18, 2016
Expiration Date: October 17, 2021

OHIO ENVIRONMENTAL PROTECTION AGENCY

GENERAL PERMIT AUTHORIZATION FOR DISCHARGES ASSOCIATED WITH
CLEANING OF BRIDGE JOINTS, SCUPPERS AND DRAINAGE TROUGHs, AND SEATS
UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq., hereafter referred to as "the Act"), and the Ohio Water Pollution Control Act (Ohio Revised Code Chapter 6111), Discharges resulting from Bridge Cleaning Operations performed by public entities, are authorized by the Ohio Environmental Protection Agency, hereafter referred to as "Ohio EPA", to discharge to surface waters of the state in accordance with the conditions specified in Parts I through VI of this permit.

It has been determined that a lowering of water quality of various waters of the state associated with granting coverage under this permit is necessary to accommodate important social and economic development in the state of Ohio. Provision (D)(1)(j) of rule 3745-1-05 of the Ohio Administrative Code (OAC) was applied to this application. This provision excludes the need for the submittal and subsequent review of technical alternatives and social and economic issues related to the degradation. Other rule provisions, however, including public participation and appropriate intergovernmental coordination were required and considered prior to reaching this decision.

Granting of permit coverage is conditioned upon payment of applicable fees and submittal of the Notice of Intent application form.

This permit and the authorization to discharge shall expire at midnight on the expiration date shown above. Covered activities are authorized to discharge beyond the above date of expiration, depending on the timely submittal of information and forms as are required by the Ohio EPA (see Part II.F).


Craig W. Butler
Director

I certify this to be a true and accurate copy of the
official documents as filed in the records of the Ohio
Environmental Protection Agency.

By  Date: 10-18-16

CLEANING BRIDGES PROCESS

- Submit Notice of Intent (NOI)
 - Include all bridges in county
 - Bridge name and identifier
 - Superior/High Quality stream, and upstream by 1 mile
 - Bridges located in MS 4 areas
 - Estimated schedule
- Receive Permit

CLEANING BRIDGES PROCESS

- ODNR
 - Superior High Quality Waters
 - Outstanding State Waters

Water Body Name	Flows Into	Drainage Basin	Water quality
Alum Creek - headwaters to West Branch (RM 42.8)	Big Walnut Creek	Scioto	Superior high quality waters
Anderson Fork - Grog Run (RM 11.02) to the mouth	Caesar Creek	Little Miami	Superior high quality waters
Archers Fork	Little Muskingum River	Central Ohio tributaries	Superior high quality waters
Arney Run - Black Run (RM 2.2) to the mouth	Clear Creek	Hocking	Superior high quality waters
Ashtabula River - Confluence of East and West Fork (RM 27.54) to adjacent East 23rd Street (RM 2.00)	Lake Erie	Ashtabula	Superior high quality waters
Auglaize River - Kelly Road (RM 77.32) to Jennings Creek (RM 47.02)	Maumee	Maumee	Superior high quality waters
Baughman Creek	Grand River	Grand	Superior high quality waters
Beech Fork	Salt Creek	Scioto	Superior high quality waters
Bend Fork - Joy Fork (RM 4.0) to the mouth	Captina Creek	Central Ohio tributaries	Superior high quality waters

CLEANING BRIDGES PROCESS

- **Prior to Cleaning**
 - Visual Site Inspection
 - Specific Work Plan
- **Day of Cleaning**
 - Install Temporary BMP's
 - Cover Scuppers
 - Minimize Use of Water
 - Dispose of Sweepings as Solid Waste

CLEANING BRIDGES WORK PLAN

Bridge Cleaning Work Plan Checklist		
Scheduled Dates:	Date Start:	Date End:
BRIDGE INFORMATION		
Structure File Number (SFM)	7704186	Feature Intersected: OVER CR-33 & YELLOW CREEK
County	SUM	Over Water
Inventory Route	77	Railing Type: \$WA
Straight Line Mileage	25130	Special Designation (L or R)
Yes	Water quality of featured intersection is classified as Superior Waters or Outstanding waters ** Vacuum Truck MUST Be Used If Water Is Used to Clean Anything EXCEPT Bridge Seats. CHECK FOR 20' RULE**	
REPORTING (PRE-WORK Activity Verification)		
Initials		
	Bridge cleaned using compressed air and hand tools (No water used)	
	Potable water or other clean source of water has been chosen for washing activities. (Note if brine tanks are used as storage the tanks they must be cleaned prior to filling.)	
	Areas subject to sweeping have been identified to collect loose solids to the maximum extent practicable.	
Initials	Temporary Best Management Practices	Comments
	Locations of BMP's to minimize discharges to waters of the state have been identified.	This item is to be performed before work activities and initialed by the personnel supervising the work. (note: Pre-work inspection reqmts may be completed by others)
	Type of BMPs identified if needed.	<input type="checkbox"/> Vacuum system/truck to clean scuppers, <input type="checkbox"/> Sandbags over first downstream scuppers when cleaning joint with water, <input type="checkbox"/> snake along parapet across break in joint extending to the approach embankment when cleaning joint with water. <input type="checkbox"/> other
	Additional BMP Comments:	
SITE SPECIFIC WORK PLAN		
Candidate Status	YES	JOINTS

DECK JOINT - BEFORE



DECK JOINT CLEANING



DECK JOINT - AFTER



SWEEPING - BEFORE



SWEEPING



SWEEPING - AFTER



BRIDGE ROCKER BEARINGS - BEFORE



BRIDGE ROCKER BEARINGS CLEANING



BRIDGE ROCKER BEARINGS - AFTER



THE SUMMARY

- The funding and legislation situation requires we change our approach
- The solution is to change when we address our needs
- We must take steps to manage our assets over their entire life

THE SUMMARY (CON'T)

- Pavement and bridge strategies will enable ODOT to cost-effectively maintain our assets in a state of good condition

QUESTIONS

