



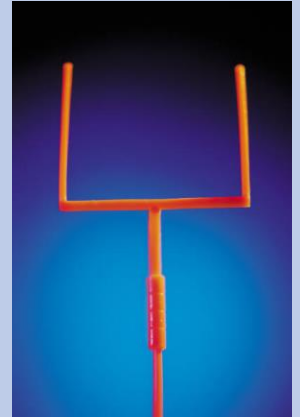
COUNTY DRAINS & MDOT

**Presented by
James L. Davis, P.E.**

2015

Overview & Goals

- History of County Drain Offices
- Brief look into Chapter 2 of the MDOT Drainage Manual
(check website for most up to date version)
- Coordination with MDOT on Drain Projects



County Drains & MDOT

- Who are County Drain Commissioners?
 - County Official and/or Office that handles drainage within the County.

County Drains & MDOT

- Who are County Drain Commissioners?
 - Brief History:
 - November of 1815, Surveyor General Edward Tiffin wrote that the Michigan Territory is apparently consisted of swamps, lakes, and poor, sandy soil not worth the cost of surveying..... not more than one acre in a hundred, or perhaps a thousand, could be cultivated.”
 - Despite setbacks from malaria and other insect-borne diseases, man’s conquering instincts prevailed. Among priorities of early leaders was creation of a system of roads promoting access to interior regions. Our first territorial drain law, enacted prior to 1820, provided drainage for these early highways.

County Drains & MDOT

- Who are County Drain Commissioners?
 - Brief History:
 - 1827: Established procedure to resolve land drainage conflicts between property owners in order to emphasize settlement and development



County Drains & MDOT

- Who are County Drain Commissioners?
 - Brief History:
 - 1839: First Drainage State drainage statute passed titled *An Act to Provide for the Drainage of Swamps Marshes and other Lowland,* Chapter 80, "Laws of Michigan"



County Drains & MDOT

- Who are County Drain Commissioners?
 - Brief History:
 - 1878: Township Drain Commissioner
 - Public Act 254, enacted in 1898, eliminated duplication of authority by fixing responsibility for most public drains in the office of an elected County Drain Commissioner



County Drains & MDOT

- Who are County Drain Commissioners?
 - Brief History:
 - Cities, villages, and townships utilized county drains for disposal of sewage as early as 1913. The Drain Commissioner was required to keep the drain clean.
 - Michigan Department of Agriculture part of the intercounty drain process (1921)
 - 1923: General Drain Law PA 316
 - Grown to 19 Chapters by 1955

County Drains & MDOT

- Who are County Drain Commissioners?
 - Today, the Drain Commissioner position operates under Current Statute known as *The Michigan Drain Code of 1956 Public Act 40 of 1956 as amended*
 - Last amended in 2019 through Public Acts 47
 - The Michigan Drain Code
 - 25 Chapters
 - Exceeds 100 pages
 - Over 300 amendments since the 1956 codification
 - Despite many attempts, no major recodification of the Drain Code since 1956

County Drains & MDOT

- Who are County Drain Commissioners?
 - 83 Counties
 - Elected every 4 years
 - Appointed
 - Road Commission
 - (Population under 12,000)

- The State is divided up into 6 Districts that meet at least 4 times annually.



County Drains & MDOT

- Who are County Drain Commissioners?
 - Different Names for the Office
 - Office can be called:
 - Drain Commission
 - Public Works Commission
 - Macomb
 - Saginaw
 - Water Resource Commission
 - Calhoun
 - Cass
 - Oakland
 - Ottawa
 - Washtenaw



County Drains & MDOT

- Who are County Drain Commissioners?
 - Staffing
 - Deputy Drain Commissioners
 - Chief Deputy Drain Commissioners
 - Drain/Staff Engineers
 - Surveyors
 - Drain Inspectors
 - SESC Inspectors
 - Drain Maintenance Staff
 - Assessment Clerks
 - Administrative Staff
 - Project Managers

County Drains & MDOT

- Who are County Drain Commissioners?
 - Because of the position being elected, there is potential for complete Drain Office turnover.
 - Active vs Inactive Drain Commissions
 - Primarily Complaint Driven
 - Maintenance



County Drains & MDOT

- Who are County Drain Commissioners?
 - The main duty of the Drain Commissioner is they have jurisdiction over county drains and drainage districts created under the Drain Code.
 - The Drain Offices inspect, repair and clean drains the are part of a drainage district, as needed
 - Additionally, establish new drains and construction of said drains
 - Counties have jurisdiction over as few as one drain to over thousands of Drains.

County Drains & MDOT

- Who are County Drain Commissioners?
 - The Drain Commissioner is often the delegated authority under Part 307 (Inland Lake Levels) of NREPA responsible for maintaining lake levels and levying special assessments for costs involved.
 - The Drain Commissioner is a member of lake improvement boards established under Part 309 (Inland Lake Improvements) of NREPA, along with appointed county commissioners, a representative from a local unit of government, and a lake owner representative.
 - The Drain Commissioner is the only statutory member of the Department of Public Works Board. Department of Public Works activities may include lake improvements, water, sanitary sewer, waste management, and erosion control.

County Drains & MDOT

- Who are County Drain Commissioners?
 - The Drain Commissioner is a statutory member of the County Parks and Recreation Commission.
 - Many Drain Commissioners are appointed as the County Enforcing Agency under Part 91 of NREPA (Soil Erosion and Sedimentation Control). The County Enforcing Agent is responsible for the administration and enforcement of Part 91 of NREPA, and may charge fees, review plans, and issue permits.

County Drains & MDOT

- Drains:
 - Drains come in all forms, shapes, sizes, and functionality. A large majority of drains were originally established for agricultural purposes. However, as Michigan developed, so did drains, by taking the shape of sanitary sewer systems, combined sanitary sewer and storm systems, tile agricultural drainage systems, and storm water management facilities. However, not all drainage courses are apart of the County Drain System.

County Drains & MDOT

- Drain Types:
 - Per Drain Code:
 - Chapter 3,4,8 - General
 - Chapter 20 - Municipal
 - Chapter 21 - Intercounty



County Drains & MDOT

- Drain Types:



County Drains & MDOT

- How are (New) Drains created:
 - Requires petition from:
 - 5 freeholders (property owners)
 - Township, City, Village
 - Road Commission / Road Department
 - MDOT

County Drains & MDOT

- Types of Drain Projects:
 - Petitioned Projects
 - Assess Drainage District 100% costs
 - Assessments may cover several years (2-10 years)
 - May Bond for multiple years (15-30 years)
 - Non-Petitioned Maintenance
 - Maintenance only, not for improvements
 - \$5,000 per mile of established drain, per year
 - » Not including engineering, Legal or admin costs
 - Can exceed \$5,000 per mile if an Emergency
 - Municipality resolutions can allow the Drain Commissioner to exceed this amount

County Drains & MDOT

- How are the projects paid for?
 - The Code allows Drain Commissioners to pay for the costs incurred by levying special assessments to the drainage district. The drainage district generally comprises the “watershed” of the drain. Drain Commissioners act as agents for drainage districts. Each drainage district is a separate corporate entity, with the ability to borrow money, enter into contracts, and acquire property by eminent domain

County Drains & MDOT

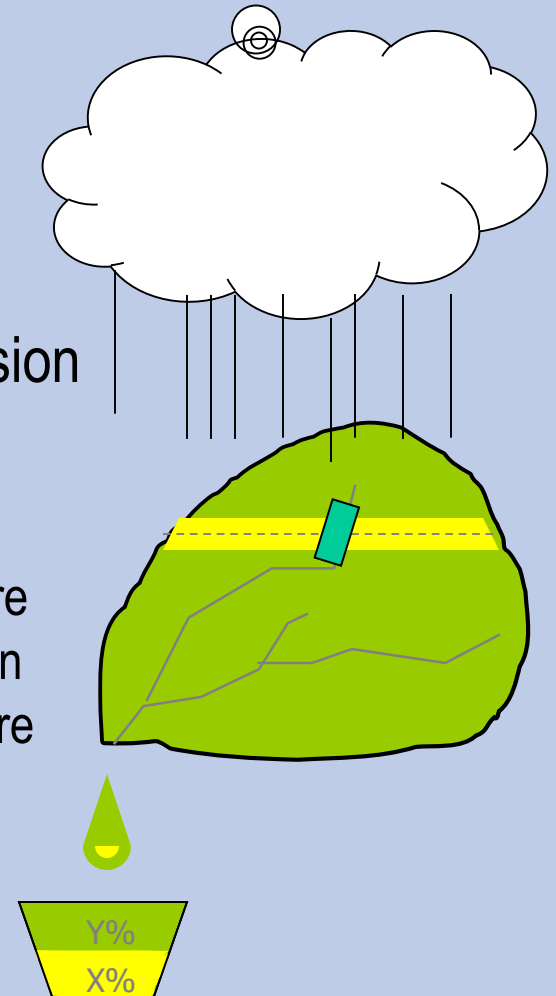
- How are the projects paid for?
 - What does that ultimately mean: The Drain Commission is the one elected official in the State that can levy taxes and borrow money without a vote of the people or approval from the county commission or state legislature.
 - Former Shiawassee County Drain Commissioner was quoted to say that the Drain Commissioner is more powerful than the Governor.

County Drains & MDOT

- Levy Assessments:
 - Drain Assessments applied across Property Owners in District.
 - Based on benefits derived (%)
 - Acreage, zoning or property use, proximity to work performed, runoff, flooding relief
 - Municipalities receive At Large Assessments (%)
 - MDOT and County Road Commission
 - Mathematical Computation
 - Apportionments across the drainage district must always equal 100%
 - If the Drain Commissioner reduces someone's percentage, someone else's must increase to reach 100%

County Drains & MDOT

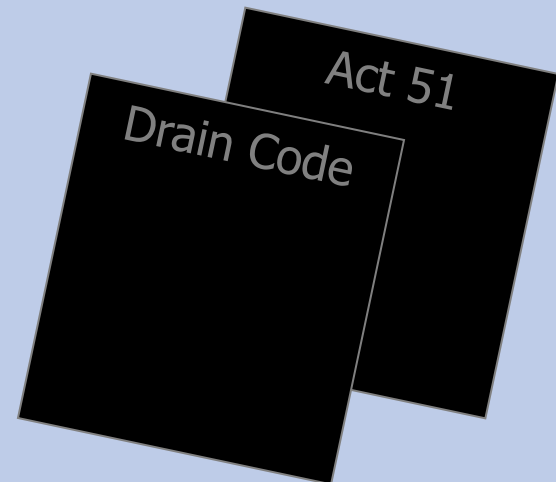
- Apportionment Computation for MDOT and County Road Commission Based on a Formula called 14a Calculations (Basic Benefits).
 - Benefits are based on a pro rata share of storm water runoff from highways in the district in direct portion to the entire district.



County Drains & MDOT

- Basis for 14a Calculations
 - Drain Code: Act 40 of 1956
 - State Funding Appropriations: Act 51 of 1951, MCL 247.664a

Administrative Rule 280.1, Section 14a, promulgated by MDOT and MDA. The Administrative Rules were filed with the Secretary of State on August 15, 1977, and took effect 15 days following this filing date.



County Drains & MDOT

- Runoff from MDOT roadways impacts approximately 5000 drains in 57 of the 83 Counties.
 - There are just over 1500 Intercounty Drains. IC Drains are those with watersheds in more than one county. The governance of the IC drains is overseen by a drainage board comprised of each county drain commissioner and lead by a representative from MDARD
- Most active counties are south of 45th Parallel

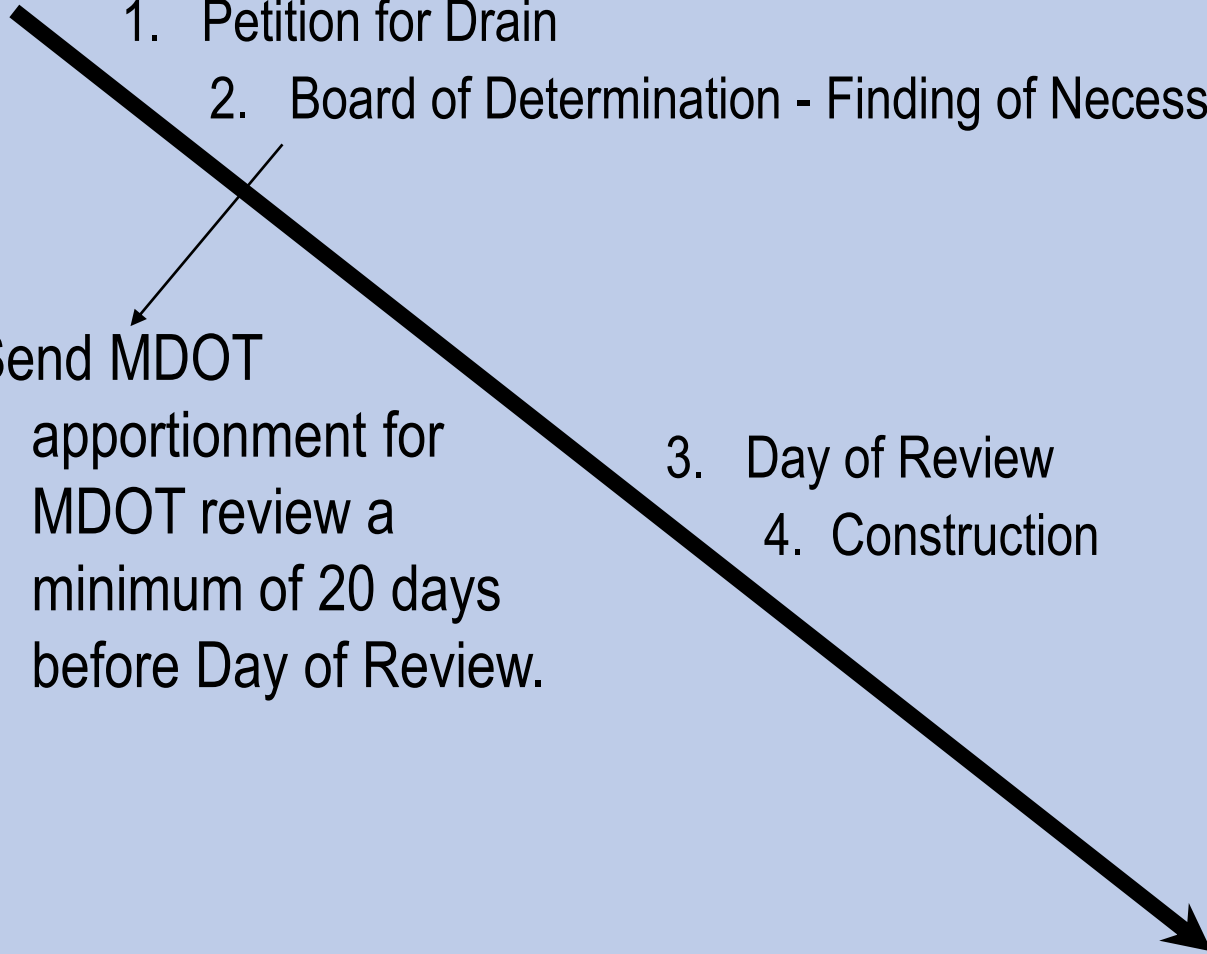
County Drains & MDOT

1. Petition for Drain
2. Board of Determination - Finding of Necessity

Send MDOT

apportionment for
MDOT review a
minimum of 20 days
before Day of Review.

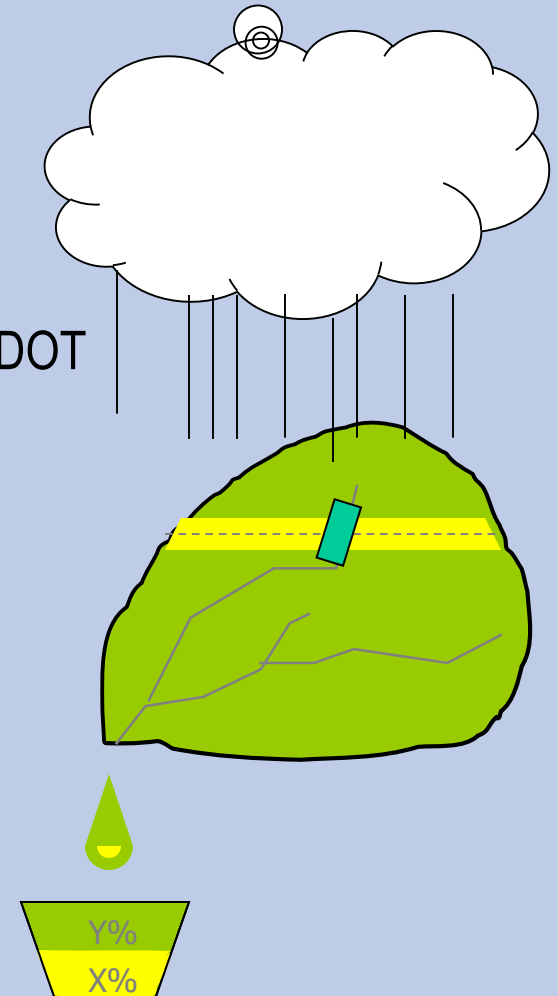
3. Day of Review
4. Construction



County Drains & MDOT

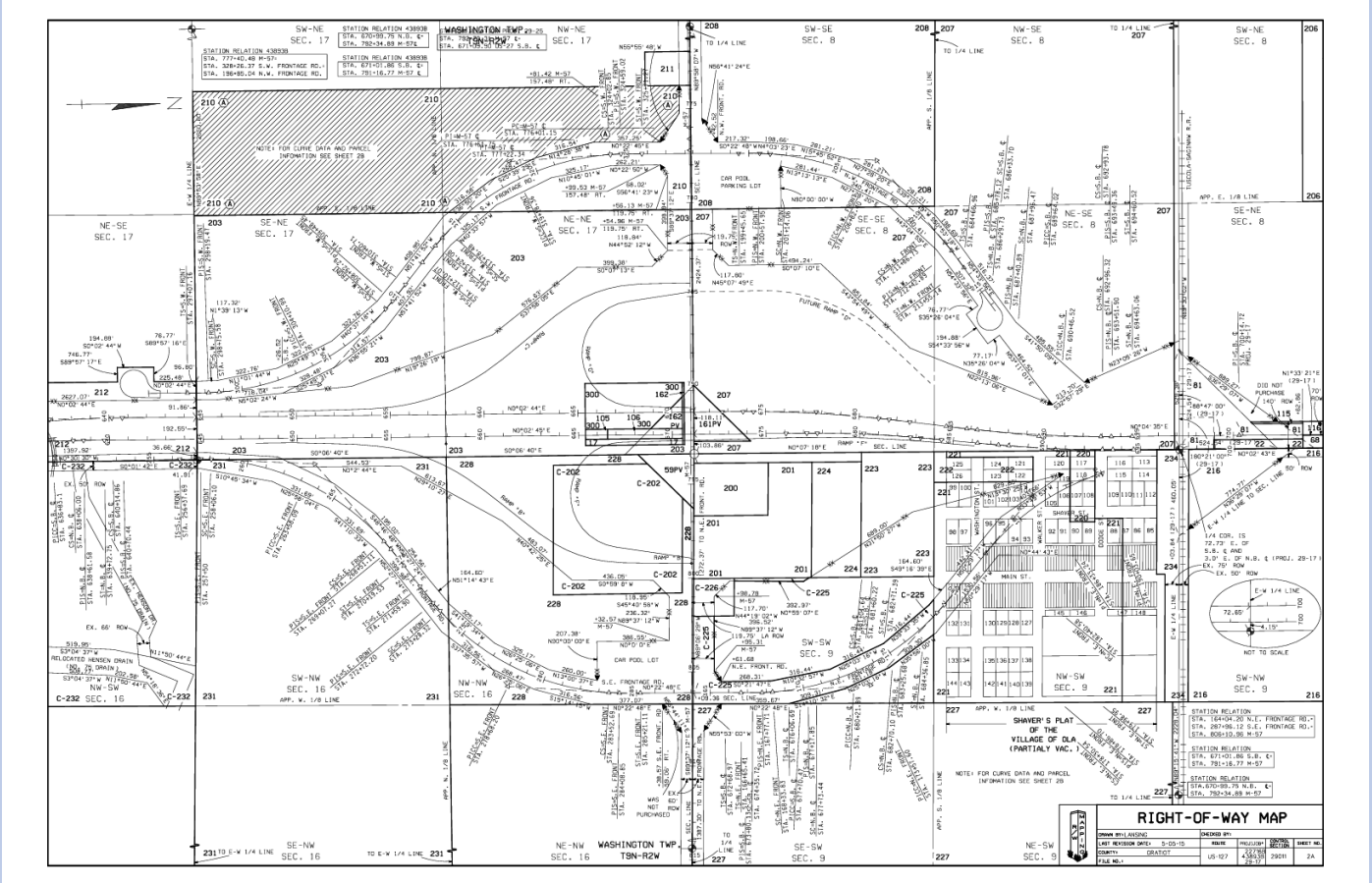
- 14a Calculations

- Includes contiguous parcels to the MDOT right of way, including:
 - Clear Vision
 - Roadside Parks
 - Rest Area
 - Maintenance Garages
 - Permanent Hold
 - Service/Haul Roads
- Tax on parcel = 0 (Zero)



County Drains & MDOT

- Examples:



County Drains & MDOT

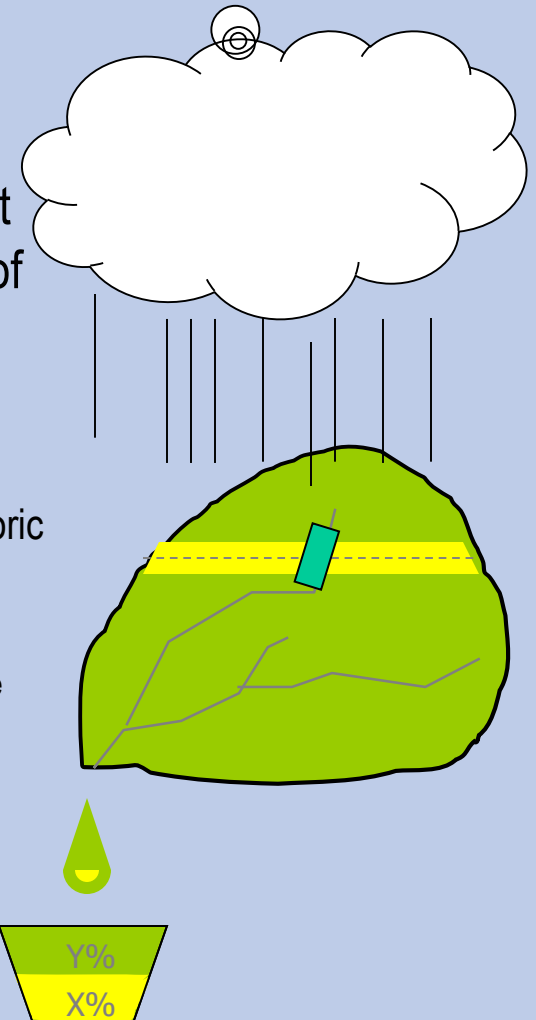
- Drainage District Runoff Coefficient
 - R 280.9 Tables -
 - Rule 9. – The tables referred to in these rules are set forth as follows :

Table I

<u>Type of Surface</u>	<u>Runoff Coefficient</u>
Concrete or Asphalt Pavement	0.8 - 0.9
Commercial and Industrial	0.7 - 0.9
Gravel Roadways and Shoulders	0.5 - 0.7
Residential - Urban	0.5 - 0.7
- Suburban	0.3 - 0.5
Undeveloped	0.1 - 0.3
Berms	0.1 - 0.3
Agricultural - Cultivated Fields	0.15 - 0.4
- Pastures	0.1 - 0.4
- Forested Areas	0.1 - 0.4

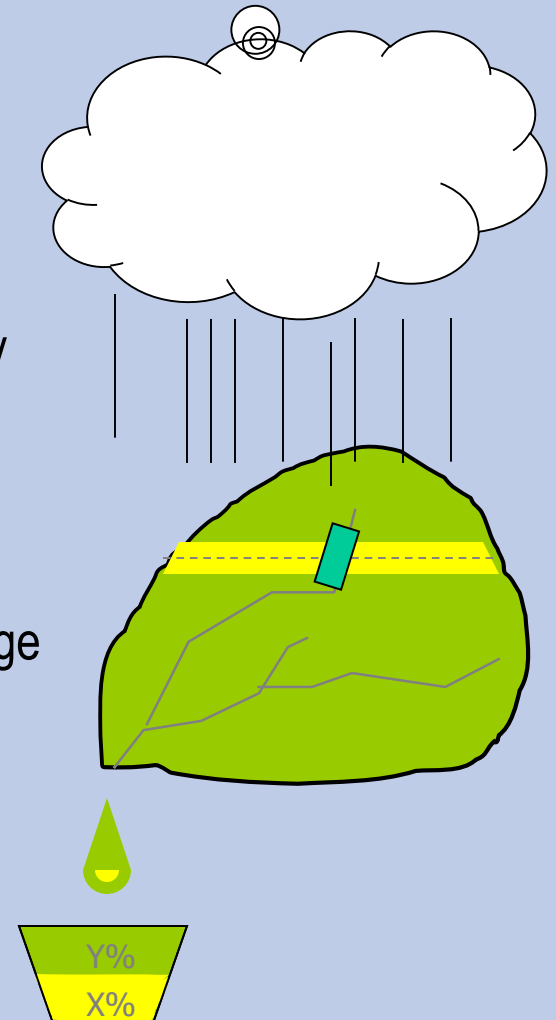
County Drains & MDOT

- 14a Calculations
 - 4 different scenarios for apportionment review (20 day minimum prior to Day of Review)
 - New Drain, 1st Apportionment
 - Drain Office wishes to update the “Roll”
 - Chapter 8 Maintenance Project, Hold Historic
 - Drainage District Boundary Review
 - Sec 197 (Public Act 261 of 2013)
 - Allows Drain Commissioners to update drainage district with engineering recommendation
 - Need Petition or Agreement previously to alter Drainage District
 - * Can do a Sec 197 as a stand alone
 - » 10 day review
 - Will eventually require an apportionment review



County Drains & MDOT

- Information that MDOT needs for 14a Calculation Submittal
 - Per Drain Code, MDOT needs a minimum of 20 days before the Day Of Review.
 - Map of Drainage District
 - Area of Drainage District
 - Area of MDOT right-of-way in Drainage District
 - Drainage District runoff coefficient
 - MDOT right-of-way runoff coefficient
 - MDOT review of Submittal

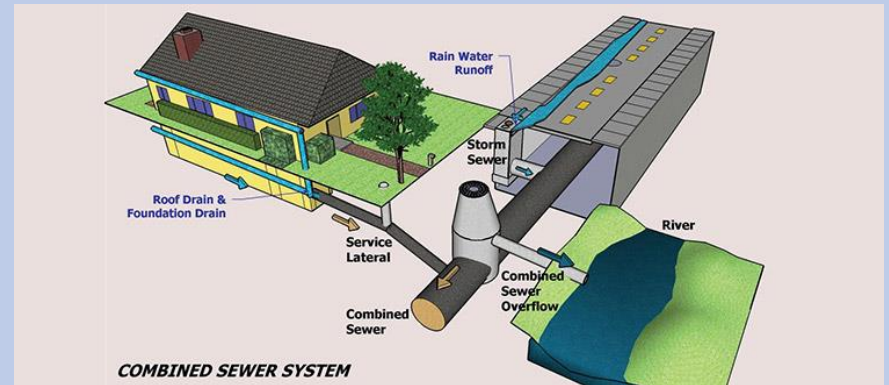


County Drains & MDOT

- Supplemental Benefits
 - MDOT pays for improvements/construction methods that MDOT requires.
 - Sizing
 - Material
 - Special Items
 - Jack and Bore
 - Situations where a Drain Commissioner and the Department have agreed to perform additional work.
 - Requires agreement between MDOT and County Drain Commissioner.

County Drains & MDOT

- Dealing with other Municipalities
 - Cost Participation
 - Municipal Storm Sewers and CSO Systems
 - Combined Sewer Overflow or Outfall
 - Storm Sewer and Sanitary Combined
 - Must be notified
 - Not retroactive
 - Calculations
 - Flow Share
 - Cost of Item(s)
 - Agreement and Exhibit Map



Working with Drain Offices

- Providing Information to Drain Offices
 - Forwarding engineering plans to drain commissioner.
 - A lot of the Drains were constructed prior to 1970
 - Because Drain Maintenance is “complaint driven”, drains have not been cleaned out for 25+ years.
 - Drains will have a legal alignment and elevations
 - Naming may be different than local or USGS mapping

The image shows a historical document titled "(20) Drain Plan" with a handwritten "L" in the top right corner. It contains a detailed table with multiple columns and rows of handwritten data. The columns include stationing (e.g., 1+00, 2+00, 3+00), elevations (e.g., 100.00, 100.50), and other technical specifications. The document is written on aged, yellowed paper and appears to be a technical drawing or plan for a drainage system.

STATION	DATE	DEPTH	WIDTH	LENGTH	ELEVATION	REMARKS	OWNER
1+00		5	2	10	100.00		
2+00		5	2	10	100.50		
3+00		5	2	10	101.00		
4+00		5	2	10	101.50		
5+00		5	2	10	102.00		
6+00		5	2	10	102.50		
7+00		5	2	10	103.00		
8+00		5	2	10	103.50		
9+00		5	2	10	104.00		
10+00		5	2	10	104.50		
11+00		5	2	10	105.00		
12+00		5	2	10	105.50		
13+00		5	2	10	106.00		
14+00		5	2	10	106.50		
15+00		5	2	10	107.00		
16+00		5	2	10	107.50		
17+00		5	2	10	108.00		
18+00		5	2	10	108.50		
19+00		5	2	10	109.00		
20+00		5	2	10	109.50		



Working with Drain Offices

- Providing Information to Drain Offices
 - Forwarding engineering plans to drain commissioner.
 - Sec. 328. Before the department of state highways may commence the construction of a state highway, the engineering plans of the state highway relative to county drains shall be forwarded to the drain commissioner of each county where the state highway is to be constructed.
 - As stated in the MDOT Drainage Design and Stormwater Management Manual (Drainage Policy and Guide) – “The (MDOT) Project Manager is responsible per section 4.01.06C of the Road Design Manual to transmit plans to the County Drain Commissioners (per Section 328 of the Drain Code of 1956) and coordinate with MDOT Drainage Coordinator and the RDC (Region Drainage Coordinator).”

County Drains & MDOT

- Questions ????

