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## **Session 23: Leveraging Electronic Plan Data Electronic File Deliverables**

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# ODOT CADD Background



- MicroStation – Standardized 1994
  - Version 8 - 2005
  - XM Release - 2008
- GEOPAK – Standardized 1996
  - Design Software (Assist in generating alignments, profiles, cross sections, etc.)
  - GEOPAK Road
  - GEOPAK Survey
  - GEOPAK Site

# ODOT References

- Reference Resources (Links to all ODOT Standards)

<http://www.dot.state.oh.us/drrc/>

- MicroStation CADD standards

[www.dot.state.oh.us/cadd/cadd.asp](http://www.dot.state.oh.us/cadd/cadd.asp)

# ODOT References (Continued)

- GEOPAK Road Training Guide  
<http://www.dot.state.oh.us/cadd/GPKManual/>
- CADD Engineering Standards Manual  
<http://www.dot.state.oh.us/cadd/CaddManual/>

# Construction Uses



- Electronic Grading
- Value Engineering Change Proposals
- Storm Water Pollution Prevention Plans
- Other

# Better Transition



- Transition files from the office to the field
- Files available pre-bid
  - <http://www.dot.state.oh.us/contract/dgn.htm>
  - CD/DVD Subscription Program is available
- Specific files will be provided based on type of project – Minimal, Minor or Major

# Contract Issues

- Files provided for the contractors use
- Contract documents will refer to the signed paper/mylar plans
- Disclaimer provided
- No requirement that a contractor use these files. All information to bid, construct and inspect the project will remain on the paper/mylar plans

# Minimal Projects

- Basic Maintenance Plans, Resurfacing, mowing, etc.
- CADD files not required to be provided
  - May be provided at District discretion

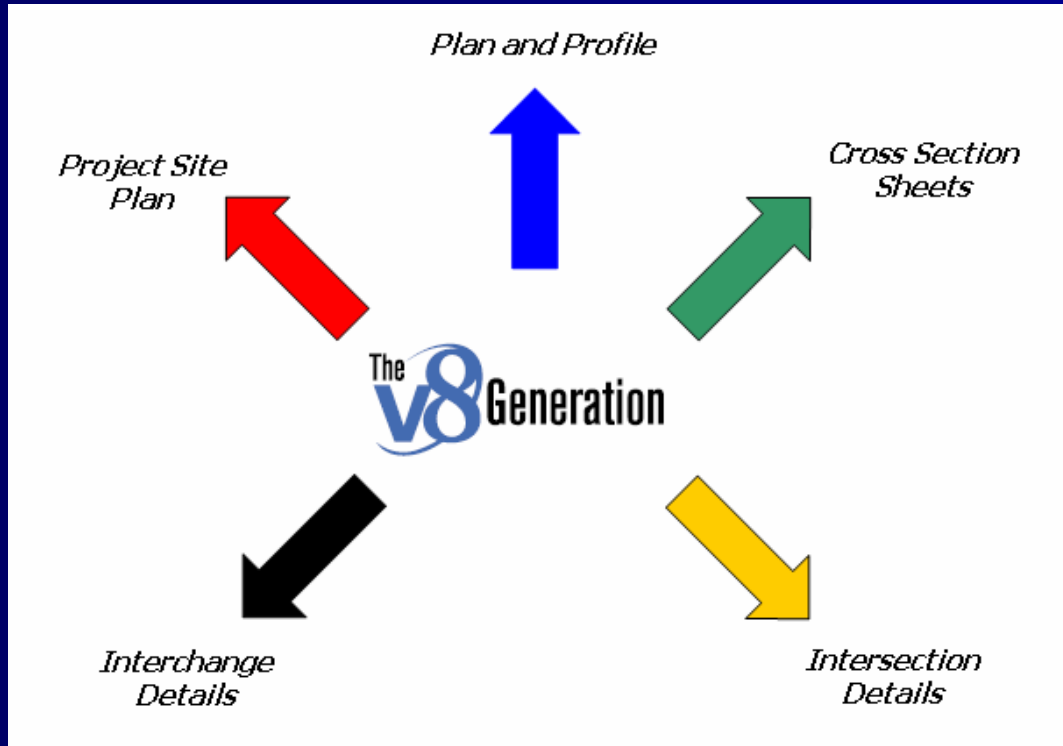
# Minor Projects

Example Projects:

- Culvert/Bridge Replacements
- Widening
- Intersection Improvements

# Minor Projects (Continued)

- MicroStation/V8 Files (DGN) for:



# Minor Projects (Continued)

Additional Design Files / Text Files:

- Surface Model - Existing (GEOPAK and LandXML format)
- Alignments - Horizontal and Vertical (GEOPAK, ASCII Text Files and LandXML formats)
- Geometry – All (GEOPAK .gpk only)

# Minor Projects (Continued)

- Control Points (ASCII format)

- Northing
- Easting
- Station
- Offset
- Elevation

	A	B	C	D	E	F	G	H
1	Point Number	Feature Code	Northing	Easting	Elevation	Chain	Station	Offset
2	MN900	RSPK	722830.454	1360602.511	1011.790	CLPS185	42+42.235 R 1	0.794
3	MN901	RSPK	721922.611	1360591.758	996.390	CLPS185	51+50.129 R 1	-4.010
4	MN903	RSPK	719790.857	1361650.303	963.230	CLPS185	79+19.204 R 2	-0.581
5	MN904	CNPT	723150.028	1360585.364	1003.680	CLPS185	39+22.916 R 1	22.169
6	MN905	CNPT	722637.868	1360580.137	1008.670	CLPS185	44+35.102 R 1	20.617
7	MN906	CNPT	721912.595	1360571.791	995.100	CLPS185	51+60.509 R 1	15.770
8	MN907	CNPT	721130.043	1360588.971	982.060	CLPS185	59+42.615 R 1	-15.751
9	MN908	CNPT	720502.978	1360625.496	983.540	CLPS185	65+67.063 R 1	37.490
10	MN909	CNPT	720015.113	1361160.540	964.160	CLPS185	72+88.137 R 1	15.611

- Additional Files at the District's Discretion

# Major Projects



Examples:

- Complex Projects
- New Alignments of Significant Length
- New Interchanges

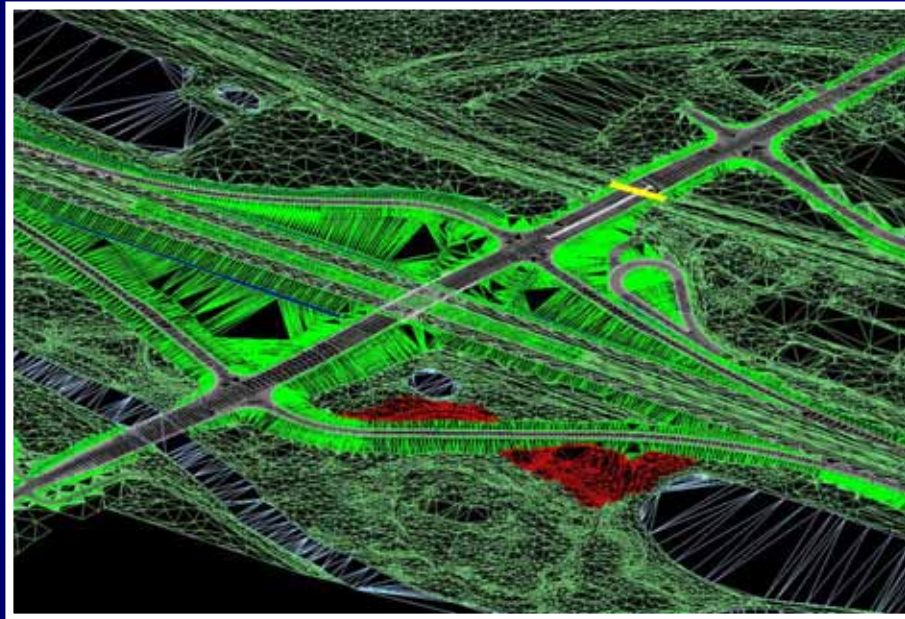
All Files Required for Minor Projects Plus...

# Major Projects (Continued)

- ASCII Cross Section Staking Report
  - Station, Northing, Easting, Elevation, and Offset for each vertex of the **proposed** finished grade from the left edge to the right edge of each cross section along the surface of the pavement.
  - Break points = Profile grade, edge of pavement, edge of shoulder (paved and graded), ditches, etc.
  - Geopak point codes not available (in report<sub>4</sub> format) at this time

# On Very Complex Projects at the District's Discretion

- Proposed surface model  
(GEOPAK .tin and LandXML)



# Coordinate System

- Schematic Plans will include a reference to coordinate system:
  - Assumed coordinates system
  - State Plane grid
  - State Plane grid converted to ground (and conversion information)

# Potential Long Term Changes

- Proposed surface/DTM/tin models for more projects
- Add intersections and interchanges to staking reports.
- Additional ASCII reports as requested by construction

# Resources

- Cadd Engineering Standards Manual
  - Section 500: Electronic Submissions
    - Cadd File Requirements
    - Reports
    - File Submissions
  - Appendix E: Electronic Submission Checklist
    - Itemized file list/requirements

# Contact Information

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- Tina Collins – Downloading problems
  - Email: [Tina.Collins@dot.state.oh.us](mailto:Tina.Collins@dot.state.oh.us)
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