MDOT Draft BIM/CIM Plan

Connecting Design and Construction to initiate Asset Management
“Give your millennial workers the technology they need to innovate and change the world in ways the generations before never could have dreamed” ~ Forbes
Data Pyramid

- **Governor’s Dashboard**
  - SOM Performance Metrics
  - Reports to Citizens

- **Performance Metrics**
  - Interfacing
  - Reporting
  - Analytics
  - Sharing

- **Business Needs**

- **SOM Universal Data**
  - Oversight: Governor’s EIM - Chief Data Stewards

- **MDOT Enterprise Data**
  - Warehouse/Repository
  - Oversight: Data Governance Council

- **MDOT Business Data**
  - Software Applications & Assets
  - Oversight: Data Stewards

- **Political & County Boundaries**
  - Road network definition (LRS)
  - Citizen Information

- **Assets**
  - ESRI R&H Documents - PWISE
  - Job Information (MAP)

- **AASHTOWare**
  - Jobnet
  - Sigma
  - Culverts
  - Signs
IT Steering Committee
Chief Data Steward is a member

Data Governance Council
Chair - Chief Data Steward

IT Agency Liaisons

Data Governor

Data Steward

Community Of Interest

Data Steward

Community Of Interest

Data Steward

Community Of Interest
Graph Database
Statewide Point Cloud

- Decision
  - JUNE 2020
  - Mandli
  - Tom Tom
  - P3 Contract

- Procurement
  - JUNE 2021
  - Negotiate Price
  - Return on Investment
  - Access & Storage
  - Determine Funding

- Implementation
  - JANUARY 2022

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# Project PDF, KMZ & Spine Lines

## Modernized Deliverables

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### QA of Data
- **JUNE 2019**
- Allow Project PDF
- Need Const. Buy-in

### Upon Request
- **JUNE 2019**

### Marketing
- **SEPTEMBER 2019**
- Conference Season

### Training
- **MAY 2020**
- GEOPAK to ORD
- Designers support Construction

### Production
- **SEPTEMBER 2020**
- Project PDF Required

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**Note:** Use the chart to track progress and allocate resources as needed.
Project PDF Engagements

- **Mandatory Pre-Bid Meeting**
- **Voluntary Pre-Bid Meeting**
- **Phased Rollout**

**Project PDF on Voluntary Basis**

**Internal Workshops**
- Jul-19
- Oct-19

**External Workshops**
- Jan-20
- Apr-20

**Webinar (Monthly)**
- Jul-20
- Oct-20

**Modernized Deliverables**
Project PDF: Rollout Upgrades

- Base
- Plan
- FPC
- OEC

- Project PDF
- Construction and Design Team Decision
- No Change to Deliverable

Modernized Deliverables
Project PDF, KMZ & Spine Lines

**QA of Data**
- JUNE 2019
- Allow Project PDF
- Need Const. Buy-in

**Upon Request**
- JUNE 2019
- Extend RID/Data Review

**Marketing**
- SEPTEMBER 2019
- Conference Season

**Training**
- MAY 2020
- GEOPAK to ORD
- Designers support Construction

**Production**
- SEPTEMBER 2020
- Project PDF Required

**How?**
Designer provides assistance

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MDOT's Project PDF/Bluebeam Experience: Single Plan Set, Real Time Tracking, Collaborative, Final Quantities, As-builts, PHD!!!, Project PDF Success I-696.
Open Roads Designer

Next Generation Design

AMP Approval
- JULY 2019
- Process Changes
- Contract Approvals

Development
- SEPTEMBER 2019
- Workspace Beta Version
- Power User Input

Survey Delivery
- MARCH 2020
- Survey in ORD

Conversion
- MAY 2020
- GEOPAK to ORD
- All jobs converted as teams are trained

Training/Pilots
- MAY 2020
- Each Region
- Support Units
- Construction
- Contractors

Production
- SEPTEMBER 2020
- Project PDF

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Lifecycle for Underground Assets

**Implementation**

- Construction 2025
- Staged Rollout

**Development**

- SPRING 2019
- Metro Pilot
- Culvert Collection Pilot
- Perform Business Arch

**Pilot**

- SUMMER 2022
- Draft Standard Updates

**Design Implementation**

- WINTER 2023/2024
- Design Rollout
- Design Training

**Training**

- WINTER 2024
- Market and Train
- Construction Survey Collection

**Implement**

- Construction 2025
- Staged Rollout

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Lifecycle for Underground Assets

Risk Assessment Modeling

Vertical Utility Investigation

Stages of Investigation
- Quality Level B Utility Investigation
- M-1 Rail Business Plan
- Independent Utility Investigation

Sources of Utility Investigation
- Held 9 Coordination Meetings
- 3D Horizontal Model
- Horizontal 2D Mapping Data
- As-Built Plans

Required relocations evaluated on a case-by-case basis

Utilization Data
Utility Concerns
Stray Current Concerns
Available Contingency (25%)
Mitigation Strategies
Project Understanding
Partnerships

15' Horizontal Track Envelope

Vertical relocations assumed for anything within the first 48”

Courtesy of HNTB and M-1 Rail
LOD Road Map

1. Identify Quality Categories
2. Identify Requirements for Work Types
3. Identify Acceptable Uses
4. Identify Minimum Ratings for each Work Type\Element
5. Create a Matrix
Level of Development and MDOT

- Identify the confidence and accuracy categories and requirements
  - Survey Confidence Rating (OGSQ)
  - Design Accuracy Rating (Design Quality)

- Find the appropriate balance of risk and confidence
  - Each project work type will likely require different criteria

- Identify the minimum risk for each project type
  - Each project work type will have a minimum required quality and accuracy