

Indiana Mesonet Advisory Body (IMAB)

Official Meeting Minutes

June 3, 2026

MADE@Plainfield, Room 142

1. Call to Order

Chair Don Cummings called the meeting to order at 9:00 AM.

2. Roll Call / Quorum Determination

A quorum was established. Voting and non-voting members were present in person and online.

- **Voting Members Present:**
 - Tony Bailey, David Beachler, Micha Burkert, Beth Carpenter, Don Cummings, Ben Esterline, Ben Haines, Garth Lindner, Susan McKinley, Sam Stroebe
- **Non-Voting Members Present:**
 - Stu Foster, Beth Hall, Matt Johnson, Sam Lashley, Mike Nichols, Austin Pearson, Alec Siurek
- **Not Present:**
 - Megan Espinda, Sarah Hudson, Dave Lampe, Shawn Naylor, Katie Nelson, Noelle Schick, Hans Schmitz, Robin Tanamachi, Ben Wicker

3. Modifications to the Agenda

No modifications to the agenda were recorded.

4. Approval of Previous Minutes

Motion to approve the previous meeting minutes as made by Beth Carpenter.

Second by Ben Esterline. Motion passed unanimously.

5. Old Business and Review of Action Items

- **Room Reservations**
 - Room reservations were completed for June and September meetings. Alternative arrangements will be required for the December

meeting due to facility availability. Calendar invitations were distributed.

- **AASC Mesonet Recognition Program Review**
 - Garrett completed review and provided recommendations to ad hoc committee (before resignation). Ad hoc technical review subcommittee convened with Austin, Sean Naylor, and Robin Tanamachi. Committee provided guidance to full body for today's discussion (later in notes).
- **National Mesonet Program Requirements**
 - Ginger provided requirements for NMP/Synoptic. Documents marked confidential per national program request, not to be shared.
- **Mesonet Atlas project updates**
 - Austin added Garrett to test system. Indiana Water Balance Network successfully added to atlas. Admin status transfer required to new IWBAN director when appointed.
 - **ACTION ITEM (Beth): Add Matt Johnson to admin for Mesonet Data Atlas.**
- **Dashboard mock-ups shared**
 - Early mock-ups of Indiana Mesonet dashboard distributed to IMAB. Comments received from Don; no additional feedback from other members.
- **Speaking engagements arranged**
 - Don coordinated climate-focused presentations. Sam agreed to speak to Scientific Club of Indianapolis on climate issues.

6a. Technical Review Committee Report

The ad hoc Technical Review Committee reported its recommendation to use AASC Level 3 Mesonet Recognition Program requirements as the basis for Indiana Mesonet Consortium membership standards. Existing participating networks (Purdue Mesonet and IWBAN) remain grandfathered.

- **Key decisions on membership approach**
 - Networks with existing AASC recognition automatically qualify as consortium members
 - Level 3 criteria selected as appropriate balance (less stringent than Levels 4-5)
 - Focus on vetting process for station metadata, proper siting, quality data standards
 - Existing participating networks (Purdue Mesonet, IWBAN) grandfathered in during initial implementation
 - All networks subject to periodic review within 5-year cycles

- Don - what ever happened to the “other” option for membership (was this from Synoptic?)
 - Garrett reviewed and Tech Committee felt the criteria was too light and not openly transparent to the public
 - Tech thought level 3 of AASC was loose enough to think that just considering AASC direction was fine
- **Article 10 Membership Standards – Detailed discussion**
 - Standards framework overview
 - Four-page document to replace current bylaws Section 10
 - Links extensively to AASC Mesonet recognition program requirements
 - Evaluation based on: station siting, sensor performance, maintenance, QA/QC, data services
 - Membership eligibility criteria
 - Open to organizations operating meteorological stations/networks in Indiana
 - Must demonstrate substantial compliance with established standards
 - May include additional environmental monitoring (groundwater, air quality)
 - Weather data focus for public-facing Indiana Mesonet hub
 - Application timeline and process
 - Applications due 30 days prior to scheduled IMAB quarterly meetings
 - Late applications deferred to following quarterly meeting
 - Technical review subcommittee evaluates all materials
 - Full IMAB membership votes on approval/denial after committee recommendation
 - Continued compliance requirements
 - Maintain substantial compliance while participating in consortium
 - Periodic review at least every 5 years
 - Earlier review possible due to operational changes or compliance concerns
 - Non-compliance procedures
 - Formal written notice of deficiencies with remediation timeframe
 - Collaborative remediation period with member organization
 - Potential actions: temporary suspension, removal from executive board, network removal
- **Critical Discussion Points on Standards**
 - Network vs. station-level evaluation debate
 - AASC evaluates networks at 50% compliance threshold for Level 3

- Concern raised about displaying poor-quality stations alongside good ones
- Discussion of sensor-specific data inclusion (e.g., good temperature data, poor precipitation)
 - Beth C. - Is there anything about if a significant sensor change (or other) occurs, how do we handle?
 - Synoptic does have an annual metadata submission requirement. We could have that too.
- Need for station-by-station review within approved networks
 - Don C. - Is there a % minimum for stations within a network to admit those stations/network?
 - Could have something like 80% of station meet the minimum
 - Assessment would be network-wide, assessing how many of stations within the network meet those standards
 - Beth H brought up that perhaps requiring a minimum of qualified stations rather than a % of the network. USGS was used as an example where they might have 100 sites across the state, but only 10 them would qualify our standards. Therefore, we might want to include their 10 stations even though that would only represent 10% of their network.
 - Folks recognized this and thought there could be a clause modification that allows the Tech Committee to review and assess
- Minimum station requirements consideration
 - Proposal for minimum 5-10 qualifying stations regardless of network size
 - Concern about single-station “networks” seeking membership
 - Balance between percentage compliance and absolute minimum standards
 - USGS example: large network with small percentage of quality mesonet stations
- Flexibility and exceptions
 - Allowable exceptions for specialized siting purposes
 - Unique operational constraints accommodation
 - Technical committee discretion for borderline cases
 - Need for clear decision criteria to support difficult rejections
- **ACTION (Austin): Tech committee look at language about percentages, minimum requirements, or other vague language that calls out the spirit of the requirement allowing consideration**

- Don - should there be something in the bylaws about what happens next?
 - **ACTION (Austin): Austin will add language to the bylaw draft about this**
- **ACTION (Austin): Note in application process that membership assume all data will be free and publicly available**
- **ACTION (Austin): Note in application process that full period of record with quality data will be made available**
- **ACTION (Austin): Add column in metadata file both the installation date AND start date of quality data.**
- **ACTION (Austin): Add somewhere an expectation that member networks attend all quarterly meetings and provide network updates**
- **Membership Application System Walkthrough**
 - Platform and accessibility
 - Smart Sheets-based application system
 - Single-session completion required - cannot save progress
 - Warning needed about completion requirements
 - **ACTION (Austin): Make note/warning with application that it cannot be saved so filling out the metadata template may be important**
 - Application structure and content
 - Clear distinction from AASC recognition program application
 - Basic network information: organization name, operational years, primary purpose
 - Contact information and data hub website details
 - Network size categories: 1-5, 6-20, 21-50, 50+ stations
 - Required documentation components
 - Station and network metadata via downloadable template
 - Siting documentation and photographs (minimum one per site)
 - Maintenance procedures and records documentation
 - Quality assurance/control procedures description
 - Data access and dissemination capabilities outline
- **Metadata Template Detailed Requirements**
 - Station identification data
 - Station name, ID, latitude/longitude coordinates, elevation
 - County location, installation date, current status
 - Station-specific URL or network data URL
 - Time zone specification (Indiana has two zones)
 - Site characterization
 - Detailed site description and land cover classification
 - Slope characteristics (flat, rolling, ridge, low spot)
 - Nearby obstructions documentation
 - Site photographs (URL links or direct uploads)

- Sensor specifications by type
 - Air temperature: sensor height and model
 - Relative humidity: height and sensor model
 - Wind measurements: sensor height and model
 - Precipitation: rain gauge height and model
 - Soil measurements: temperature depths (5, 10, 20, 50cm) and sensor types
 - Soil moisture: depths and sensor models
 - Additional sensors: expandable fields for other instruments
- Data logging and transmission
 - Data logger model information
 - Reporting frequency options (1-minute, 5-minute, 30-minute, hourly, daily)
 - Data access methods (website, API, web services, upon request)
 - Latency and transmission details
- Default template suggest what the filename structure should be.
 - **ACTION (Austin): Add the date to the filename and instructions.**
- **Quality Assurance and Maintenance Documentation**
 - Maintenance frequency and procedures
 - Average maintenance visits per station annually
 - Emergency maintenance processes and ticketing systems
 - **ACTION (Austin): Add what this means and/or have an example**
 - Maintenance record types: logs, calibration records, sensor serial numbers, technician notes, station photos
 - Archive maintenance for documentation storage
 - Quality control methods
 - Range checks, temporal checks, spatial checks
 - Manual review processes and automated flagging systems
 - Frequency of QA/QC activities (daily, weekly, monthly)
 - For QA/QC checks, should a frequency of QA/QC be added?
 - **ACTION (Austin): Add something in about this**
 - Detailed network QA/QC methodology descriptions
 - Backup and inventory management
 - Spare parts inventory as percentage of network equipment
 - Sensor replacement procedures and documentation
 - Should the be an ask about having spare/backup sensor inventory?
 - **ACTION (Austin): add this somewhere... under the sensors section?**
- **Data Management and Public Access Discussion**

- Historical data considerations
 - Full period of record availability expectations
 - Quality data start dates may differ from installation dates
 - Metadata template should include quality data availability periods
 - Historical metadata tracking challenges acknowledged
- Data storage and redundancy
 - Indiana Mesonet to serve as secondary backup for member networks
 - Current physical servers with plans for cloud migration
 - Automatic redundancy through cloud services (Google, Amazon)
 - Open public data storage options for state-funded projects
- Public access requirements
 - Free, open data access mandatory for consortium membership
 - No restrictions allowed on data sharing through Indiana platform
 - Annual metadata updates required from member networks
 - API development ongoing for direct network data access
 - Frequency of data collection (e.g., every 5 minutes) vs Temporal reporting frequency (e.g., 5, 30, 60, daily)
 - **ACTION (Austin): Wordsmith and add question about this**
- Data quality and display considerations
 - Synoptic platform currently used for spatial/temporal QC checks
 - Discussion of displaying only qualifying station data vs. entire networks
 - Need for clear data quality indicators on public platform
- **Federal Weather Service Modernization Context**
 - National Weather Service Cooperative Observer Program modernization
 - Comment period open for four more days
 - Transition from manual observations to automated systems
 - Potential loss of long-term climatological records dating to pre-1895
 - Federal push toward privatization of weather observations and forecasting
 - Opportunity for state mesonets to contribute to modernization process
 - Implications for state networks
 - Manual vs. automated observation data not directly comparable

- Risk of losing historical climate data continuity
- State mesonets may play larger role in future weather observations
- **ACTION (Austin or Beth): Email IMAB re COOP feedback on their modernization plan.**

6b. Non-Profit Status Committee Report

The committee discussed mechanisms for accepting and administering future grants, donations, and appropriations.

• Mechanisms Discussed

- Independent nonprofit organization.
 - Requires: treasurer, bookkeeping, check writing, financial liability insurance
 - Tax return obligations and investment decision protocol
 - Quarterly meeting requirements for disbursement approvals
 - Higher administrative burden and financial risk
- Existing nonprofit fiscal agent.
 - Preferred approach by ad hoc committee (Sean Naylor, Sam, meeting organizer)
 - Leverages existing infrastructure and expertise
 - Reduced hassle, expense, and liability exposure
 - Community foundation experience suggests viability
- University-administered funding structure.
 - Kentucky model: state line item funding through university protects from reallocation
 - Purdue/IU subcontractor arrangements already established
 - Overhead complications: Purdue Research Foundation charges 30%
 - Workaround discovered: structure as “gift” rather than “grant” eliminates overhead

• Decision Framework

- Consensus to defer formal decision until actual funding materializes
- Case-by-case evaluation based on donor/sponsor preferences
- Memorandum of understanding may be required for university route

• Legislative and State Funding Landscape

- Current Legislative Efforts
 - Clean Water Indiana grant language allows mesonet as eligible expense
 - Previous bill failure due to fiscal components in non-budget session, not mesonet opposition
 - 2025 budget session planning already underway with agency coordination

- Multiple legislators verbally supportive, including those with drought experience
- Funding Mechanism Challenges
 - Universities cannot directly lobby - must work through agency liaisons
 - Front office coordination between Purdue/IU and state agencies ongoing
 - ISDA exploring bill language for next session
 - Potential line item appropriation discussions with DHS and water management agencies
- Regulatory Context
 - IDEM water studies incorporating mesonet data needs
 - County Soil and Water Conservation Districts as potential grantees
 - ICA working on Clean Water Indiana grant language modifications

7. Network Owner Reports

Purdue Mesonet:

- **Funding Update**
 - Current Funding Position
 - IFA/DNR partnership: 4 stations funded with ~14 months runway remaining
 - Equipment procurement ahead of schedule (cameras, modems)
 - Travel expenses included Midwest Mesonet meeting in Cleveland (biennial)
 - Debt and Revenue Situation
 - Internal debt: \$110,000 (improvement from \$130,000 three months prior)
 - Synoptic/National Mesonet revenue: \$34-75/month for all 15 stations
 - Revenue scalable with station additions (requested 5 stations/year in new contract)
 - Business office billing errors recently corrected, contributing to debt reduction
 - Financial Sustainability Timeline
 - Current funding sufficient for 14+ months at present personnel costs
 - Synoptic revenue will take years to eliminate debt but provides ongoing support
 - Station expansion critical for revenue scaling

- **Technical Development and Infrastructure Updates**
 - Tower Installation Methodology
 - 10-meter tiltable towers selected over bolt-down approach
 - Concrete pier foundation chosen for Indiana soil conditions
 - Safety advantage: eliminates climbing requirements for maintenance
 - Camera System Implementation
 - Two-camera setup per station: tower-mounted + fence-distance for 360° coverage
 - 15-minute default interval, remotely adjustable to 30-second intervals
 - Static fixed cameras (no pan/tilt/zoom due to cost constraints)
 - Matching South Dakota Mesonet specifications for proven reliability
 - IT integration nearly complete after ~2-year development cycle
 - Website and Data Delivery
 - Complete website overhaul in progress, ~1 year from public launch
 - Target: ready for growing season to serve agricultural audience
 - Current site limitations may require interim camera image delivery solution
 - Coordination with Indiana DOT for camera integration expertise
 - Snow Depth Sensor Evaluation
 - Three sensor types tested: two acoustic/sonar, one laser-based (\$800-\$3,500 range)
 - Mixed performance results across limited snow events
 - Most expensive sensor (\$3,500) failed and required \$1,000 repair, subsequently abandoned
 - Snow fence testing (10-foot and 20-foot) showed limited effectiveness against drifting
 - Considering RM Young “snowdar” sensor based on other mesonet recommendations
 - Scalability concerns eliminate snow fence approach for 92-station network
- **Site Development and Deployment Status**
 - Newton County (Priority Installation)
 - Status: DNR easement agreements under Purdue legal review
 - Property manager enthusiastic, multiple opportunities identified
 - Expected to be first installation upon legal approval
 - Union Franklin County (Brookville Reservoir)
 - Corps of Engineers property lease coordination with DNR
 - State parks liaison confirmed routine approval process

- Same easement structure as Newton County
- Clay and Warren Counties (WHIP Complications)
 - Ideal sites identified on Wildlife Habitat Incentive Program properties
 - Federal restrictions: any non-hunting use requires habitat offset elsewhere
 - Complex approval chain: Fish & Wildlife head, property managers, federal reporting
 - Backup sites identified for both counties
 - Clay County non-WHIP alternative requires culvert/road construction (fall timeline)
- Johnson County (Contract Negotiations)
 - Utility interference resolved through instrument recalibration
 - ENH contract language revision needed (restoration requirements too restrictive)
 - City of Greenwood approval required for 10-meter tower
 - No-cost extension through September 26th (final deadline)
 - Backup sites identified: local high school (STEM project angle), emergency manager sites
- Expansion Pipeline (20+ Counties)
 - Rush County: Farming family with existing Davis instruments, ideal hilltop site near retention pond
 - Hamilton County: New agricultural technology center partnership opportunity
 - Elkhart County: Emergency manager coordination for site identification
 - St. Joseph County: Potato Creek State Park priority site (similar to Brookville)
 - Madison County: County commissioner and planner support, site selection pending
 - Indiana County Commissioners Association membership secured for fall conference presentation

Indiana Water Balance Network:

- **Organizational Changes**
 - Matt Johnson appointed Assistant Director for Information Services
 - Alec managing day-to-day operations as Building Lab Tech
 - Director retirement July 31st, Matt serving as interim director
 - Staff turnover: lost electronics specialist and geochemist/hydrologist Tracy Branum
- **Infrastructure Modernization**
 - IT migration to IU data center for enhanced security and support
 - Server virtualization reducing local maintenance burden

- Campbell Scientific data flow complications during transition
- **Hendricks County Expansion Project**
 - 3D geological modeling of surficial and bedrock layers
 - Three new monitoring wells: two deep (200-250 feet), one shallow (30 feet)
 - National Groundwater Monitoring Network integration
 - At least one well co-located with mesonet site
 - Monrovia area baseline data collection before potential data center development
- **Partnership Opportunities**
 - Co-location potential: atmospheric sensors at monitoring wells, groundwater monitoring at mesonet sites
 - IFA collaboration on groundwater studies (not currently involved)
 - Funding challenges mirror mesonet: appropriation insufficient for state statute requirements

8. Other New Business

No additional new business.

9. Open Comment Period

No open comments.

10. Chair's Comments

Chair comments emphasized continued progress on consortium development, membership standards, funding opportunities, and statewide network expansion.

11. Next Meeting

The next quarterly meeting time and location will be September 2, 2026, 9:00 AM at MADE@Plainfield, Room 142.

12. Adjournment

The meeting adjourned at 11:59 AM EDT.

Minutes submitted by: Austin Pearson (Secretary)

Minutes Approved by: IMAB on _____

Don Cummings (Chair)

Date: _____

Austin Pearson (Secretary)

Date: _____

DRAFT