

### **Section III – Comprehensive Gas Development Plans**

UMCES-AL Report recommendation 1-A, 1-C, 1-G, 5-A, 5-A.1, 5-A.3, 5-F, 5-F.1, 6-A, 6-C, 6-D, 6-E, 6-F, 6-J, 7-A, 7-A.1, 7-D, 7-D.1, 8-A, 8-B, 8-E, 9-A, 9-A.1, 9-A.2, 9-A.3, 9-E, 9-E.1, 9-G, 10-B

The authors of the UMCES-AL Report suggest that the single most important recommendation in their report is the comprehensive drilling plan. They recommend that the State should institute a voluntary program whereby a company holding gas interests could prepare and submit for State approval a comprehensive drilling plan for a large geographic area before applying for any specific permit to drill a well. Incentives could be offered, such as expedited processing of permits for individual wells included in the comprehensive drilling plan.

The Departments agree that a comprehensive plan offers great advantages, but we recommend that the program be mandatory rather than voluntary. We propose that Maryland require, as a prerequisite to the issuance of any permit to drill a gas exploration<sup>7</sup>, extension, or production well, that the prospective applicant first submit a Comprehensive Gas Development Plan (CGDP). A CGDP should be required even for exploration and extension wells, because of the likelihood that an exploration well will become a production well. The siting of the exploration well therefore is potentially as important as the siting of a production well. We believe that the program can be structured so that obtaining a CGDP is not unduly burdensome to the applicant, allows industry the flexibility to respond to changing conditions, and still achieves its purpose of reducing adverse and cumulative effects. The CGDP will address the locations for activities, but not the well-specific requirements of an individual permit. The processes, therefore, will not be duplicative.

The CGDP should address, at a minimum, all land on or under which the applicant expects to conduct exploration or production activities over a period of at least the next five years. The CGDP could be submitted by a single company or by more than one entity for an assemblage of land in which multiple entities hold mineral rights. The CGDP must address the locations of well pads, roads, pipelines and ancillary facilities related to exploration or production activities from the identified land, but the CGDP is not a commitment on the part of the applicant to install any of the facilities, or to proceed in a particular sequence.

CGDPs provide an opportunity to address multiple aspects of shale gas development from a holistic, broad-scale planning perspective rather than on a piecemeal, site-by-site basis. By considering the entire project scope of a single company, or multiple companies simultaneously, responsible energy development could proceed while minimizing

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<sup>7</sup> Current Maryland law allows an applicant to apply for a permit for an exploratory well; however, production may not commence until the environmental assessment has been completed and approved by MDE and MDE has issued a permit for production. Md. Env. Code 14-106. Thus, a permit for an exploratory well does not guarantee that a production permit will be granted. If the CGDP were to exclude exploratory wells, minimum setbacks and other siting restrictions would still apply, but the opportunity for larger, landscape-level planning would be compromised. For this reason, the Departments recommend that a CGDP be required even for an exploratory well

conflicts and addressing the concerns associated with maintaining the rural character of western Maryland, and protecting high value natural resources and resource-based economies. To cite just one example, land disturbance could be minimized if infrastructure were shared or located within the same right of way. Proactive, upfront planning at a landscape scale provides the framework for evaluating and minimizing cumulative impacts to the environmental, social and economic fabric of western Maryland. The Departments agree that a CGDP process will be beneficial and recommend that this be a mandatory prerequisite before any individual well permits would be issued. The associated recommendations, as listed as above, are generally accepted by the Departments for planning guidelines. The outline below provides a conceptual framework.

### **A. Application Criteria and Scope**

1. Companies intending to develop natural gas resources are required to submit a CGDP for the area where the applicant may conduct gas exploration or production activities and install supporting infrastructure (compressor stations, waste water treatment facilities, roads, pipelines, etc.) for a period of at least five years.
2. Companies whose geographic planning units overlap are encouraged to develop integrated plans to improve use of existing and new infrastructure, to share or co-locate infrastructure, and to minimize cumulative impacts.
3. A company is not obligated to develop all the pads, wells or supporting infrastructure identified in the plan.
4. An approved CGDP will remain in effect for ten years.

### **B. Planning principles**

1. Use multi-well, clustered drilling pads to minimize surface disturbance.
2. Comply with location restrictions, setbacks and other environmental requirements of State and local law and regulations.
3. Avoid, minimize and mitigate impact on resources as discussed in Section IV.
4. Preferentially locate operations on disturbed, open lands or lands zoned for industrial activity.
5. Co-locate linear infrastructure with existing roads, pipelines and power lines.
6. Consider impacts from other gas development projects and land use conversion activities and plan to minimize cumulative surface impacts.
7. Avoid surface development beyond 2% of the watershed area in high value watersheds. This threshold is based on the ecological sensitivity of specific aquatic organisms within these high value watersheds. Other factors, as discussed in the location restriction and setbacks section will also limit the location and extent of surface development.
8. Minimize fragmentation of intact forest, with particular emphasis on interior forest habitat.

9. Adhere to Departmental siting policies (to be developed) to guide pipeline planning and direct where hydraulic directional drilling and additional specific best management practices are necessary for protecting sensitive aquatic resources when streams must be crossed.
10. Additional planning elements include
  - a) Identification of travel routes.
  - b) Sequence of well drilling over the lifetime of the plan that places priority on locating the first well pads in areas removed from sensitive natural resource values.
  - c) Consistency with local zoning ordinances and comprehensive planning elements.
  - d) Identification of all federal, state and local permits needed for the activities.

### **C. Procedure and Approval Process**

1. An applicant with the right to extract natural gas prepares a preliminary CGDP that best avoids and then minimizes harm to natural, social, cultural, recreational and other resources, and mitigates unavoidable harm.
2. The CGDP shall include a map and accompanying narrative showing the proposed location of all wells, well pads, gathering and transmission lines, compressor stations, separator facilities, access roads, and other supporting infrastructure.
3. The State will develop a Shale Gas Development Toolbox that will include GIS data and provide it to companies that wish to prepare a CGDP. The applicant's preliminary Environmental Assessment shall be based on the data in the Toolbox, supplemented with other information as needed, including a rapid field assessment for unmapped streams, wetlands and other sensitive areas. A detailed description of the shale Gas Development Toolbox is provided in section E, below.
4. State agencies and local government agencies review the CGDP, evaluate opportunities for coordinated regulatory review and present comments to the applicant to direct any needed alternative analyses for review. This review will be completed within 45 days of submission by the applicant of the CGDP.
5. The public review and approval process will be initiated upon request of the applicant following receipt of agency comments.
6. A stakeholders group that includes the company, local government, resource managers, non-governmental organizations, and surface owners will be convened; in a facilitated process that shall not exceed 60 days, to discuss and improve the plan.
7. The plan is presented at a public meeting by the applicant and the public shall be allowed to comment on the plan.
8. The applicant may further modify the plan based on alternatives analyses and public comment before submitting it to the State for approval.

9. In evaluating the CGDP, the State shall determine whether the plan conforms to all regulatory requirements concerning location, and shall consider the plan and the comments of the stakeholders and public.

10. If the State determines that the CGDP conforms to regulatory requirements and, to the maximum extent practicable, avoids impacts to natural, social, cultural, recreational and other resources, minimizes unavoidable impacts, and mitigates remaining impacts, the State shall approve the CGDP.

11. Once the CGDP is approved, the entity may file a permit application for one or more wells that are consistent with the plan.

12. Significant modification to the original plan, such as a change in location of a drilling pad, or the addition of new drilling pads, will require the submission and approval of a modified CGDP application. Modifications that cause no surface impact, such as the installation of additional wells on an existing pad or a change in the sequence shall be approved by the State upon request of the applicant.

#### **D. Benefits of a Comprehensive Gas Development Plan**

An approved, high quality CGDP could result in numerous benefits for all parties. These benefits, particularly those related to improved coordination and expedited permit review, are still under discussion among the review agencies, but could include:

1. Better protection of natural, social, cultural, recreational and other resources, and reduced cumulative impact.
2. Fast track wetland and waterway permit approvals for multiple individual impacts, such as those associated with pipeline networks and road construction, contingent on a comprehensive alternatives analysis scenario.
3. Preliminary approval for drill pad locations, allowing the applicant to initiate baseline monitoring and begin application for individual well permits.
4. Expedited consideration of other environmental approvals and permits, such as air quality and water appropriation and use.
5. Opportunities to implement mitigation actions prior to permit approval or in advance of project development.
6. Reduced need for multiple public hearings.
7. Reduced expense and risk associated with leveraging existing infrastructure and centralizing various processing needs.
8. Reduced public use conflict and improved public good will.

#### **E. The Shale Gas Development Toolbox**

The toolbox will provide access to geospatial planning data necessary to address the Comprehensive Gas Development Plan (CGDP). The data will be available for download, and can be viewed through a publically accessible interactive mapping application. The mapping application will be very similar to DNR's [MERLIN](#) online

tool<sup>8</sup> but will be tailored to include the geospatial data needed for developing and evaluating the CGDP. Users of this data should be aware that actual site and landscape conditions may not be accurately reflected in the mapped information. Many fine scale environmental features, such as headwater streams or small wetlands, are often not mapped. In addition, the effects of recent land use change may not be reflected in the mapped datasets. For this reason, and to evaluate other site specific factors, additional site assessment data will need to be collected by the applicant to meet the requirements of the CGDP. The planning datasets that will be included in the toolbox include those related to the elements discussed in Section IV. A. Location Restrictions and Setbacks and in Section IV. B. Siting Best Practices. Additional datasets may be added to improve the CGDP process.

1. Planning objective: Leveraging existing infrastructure.
  - a. State and county roads
  - b. Existing right of ways for gas lines and transmission inks
  - c. Land use/land cover data for identifying industrial land uses
  
2. Planning element: Location restrictions and setbacks that indicate where certain gas development activities are restricted.
  - a. Streams, rivers and flood plains – stream maps will include designated use classifications
  - b. Wetlands
  - c. Reservoirs
  - d. Irreplaceable Natural Areas (BioNet Tier 1 and 2 areas)
  - e. Cultural and historic areas, including National Registry sites
  - f. Local, state and federal parks, including setback recommended through participatory GIS workshops
  - g. Wild and scenic rivers
  - h. Scenic byways
  - i. Mapped limestone outcrops and known caves
  - j. Historic gas wells
  - k. Private and public groundwater wells or surface water intakes
  
3. Planning element: Additional siting criteria to guide avoidance, minimization and mitigation of potential impacts.
  - a. Land use land cover for preferentially siting activities on open, disturbed land or areas in industrial use and avoiding forested areas.
  - b. High value watersheds (Tier II, Brook trout and Stronghold watersheds) where surface area impacts should not exceed the ecological threshold of 2 % of the watershed area.
  - c. Forest interior dependent species (FIDS) habitat - large contiguous forest patches important for supporting FIDS
  - d. Green Infrastructure Hub and Corridor network - a system of large habitat areas connected to each other through corridors that are important for allowing plant and animal migration.

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<sup>8</sup> <http://dnrweb.dnr.state.md.us/merlin/>

- e. Forests important for protecting water quality - forested areas that have exceptional value for maintaining clean and cool water quality for streams and rivers.
  - f. BioNet habitat areas - habitat important for wildlife and rare species. This dataset includes Irreplaceable Natural Areas (Tier 1 and 2 areas) and other important habitats (Tier 3, 4 and 5 areas).
  - g. GreenPrint Targeted Ecological Areas – high value lands and waters that are eligible for State conservation funding through Program Open Space.
  - h. Mapped underground coal mines
  - i. Aerial imagery – useful for evaluating actual ground conditions
4. Planning element: Identification of appropriate natural resource mitigation actions to address unavoidable impacts.
- a. The [Watershed Resources Registry Tool](https://watershedresourcesregistry.com)<sup>9</sup> can be used to identify potential mitigation options for restoration and conservation of stream buffers, wetlands and upland forests. This tool has been developed by a consortium of federal and state regulatory and non-regulatory agencies, including MDE and DNR.

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<sup>9</sup> [watershedresourcesregistry.com](https://watershedresourcesregistry.com)