

**Information Technology Supporting Documentation  
Commonwealth of Pennsylvania  
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<b>Data Modeling Best Practice Standards</b>	
<b>Best Practice</b>	<b>Rationale</b>
Model access should be controlled with security features built into the software.	Limits access to authorized users to protect content of sensitive information.
Merge models and reconcile overlapping duplicate objects. Identify differences between model versions.	Modeling tools have the ability to compare and merge information in-between models, and also produce the DBMS-specific alteration SQL to modify structures while allowing the model to be simultaneously updated to reflect changes on the server.
Projects can save time and money by using a previously used and approved logical and physical model as a starting point.	This leads to physical data sharing and less storage of redundant data. It also helps the organization recognize that information is an organization-wide resource and that data models are important information assets.
It is essential that there be a single, accurate, reliable source for a particular data model.	Multiple disparate sources create confusion during the development cycle.
A comprehensive change management process must be put in place to manage modifications to the model and insure their accuracy.	Time and money will be wasted if project teams cannot rely on the integrity of the data model.

<p>The ability to bi-directionally compare and merge model and database structures will reduce additional work on the part of the Data administrators to manage change.</p>	
<p>A good model management process is essential. This is the method by which data and process models are developed, maintained, used and reused within a model development life cycle. A rule of thumb is if you have 5 or more data modelers, you need a model management infrastructure.</p> <p>A model-management infrastructure is critical for managing the impact of change and resolving model conflicts during and after the development process. Standards and procedures around model management must be put in place.</p>	<p>Without a model management infrastructure:</p> <ul style="list-style-type: none"> <li>• Model content becomes inconsistent</li> <li>• Redundant data structures are created</li> <li>• Miscommunication between modelers, analysts, and users occurs</li> <li>• There is an inability to share knowledge between projects and agencies.</li> </ul> <p>Multi-user modeling environments built to handle real-world situations makes coordinated, large-scale modeling possible.</p>
<p>Data models should be created with the intention to share data structures across projects and agencies.</p>	<p>Opportunities to reduce data redundancy and share data will improve data quality and reduce costs. Information silos within and among agencies will be eliminated.</p>