



Draft

# Information Technology Department

## Best Practice

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### Backup and Recovery

***Purpose:***

Without an adequate backup and recovery plan, the City is at risk. Because the City relies on its data and mission critical applications the cost of downtime is exorbitant.

Data backup involves transferring data from the computer systems to a separate storage device and storing this information on tape. An archive is a long term, permanent data backup which is kept in a safe off site location.

Backup tape sets may be defined as follows:

- General Systems
- eMail System
- Financial System

***Practice:***

**Daily Backup:**

Incremental backup (not differential) should occur every evening for all new data files and those subject to change.

RDBMS backup occurs using native Oracle and SQLServer utilities to local disk storage, then captured as a part of daily backup.

**Weekly Backup:**

Complete backup should occur weekly and include complete storage of all data files. Exceptions may include any data files which are not subject to changes on an annual or multi-year basis, like digital ortho photos.

Weekly backup should also include system and software files, including the software itself.

**Monthly Archive:**

The last weekly backup made for each month would be archived offsite as a monthly archive.

**Annual:**

- The monthly archive of June would be archived offsite as a yearly archive.
- Annual backups should be stored for no less than 5 years.
- Any tape set older than three years will be direct copied to a new tape set.

## **Special Archives**

### **Financial:**

A special archive will be made quarterly of the Financial Systems database. Financial backups should be stored for no less than 7 years and any tape set older than three years will be direct copied to a new tape set.

### **GIS:**

A special archive will be made annually of the GIS database and stored for 3 years.

## **General Rotation and Replacement:**

Operations should follow a standard Grandfather – Father – Son (GFS) rotation method using 20 tape set. Tape replacement into the GFS should include no less than 50% media replacement annually.

## **Periodic Testing:**

### **Quarterly Recovery Testing**

Operations will recover a *portion* of the monthly backup archive every 3 months to assure restoration.

### **Annual Testing:**

Operations will perform backup recovery testing at the close of each fiscal year (end of June). This test will include, but not limited to:

- Partial recovery from annual backup
- Restoration of email

### **RDBMS Testing:**

Operations will perform backup recovery testing for each RDBMS database quarterly to assure restoration.

## **Systems Migration:**

**Annual backup systems review will occur, considering hardware/technology advancement, special archive requirements, additional testing requirements, and backup window definition.**

### **Hardware**

Any change to backup media or tape system will require a complete tape-to-tape copy of all archived media tape sets.

### **Solutions Release**

Any major software release will require an Analyst to determine if the solutions data model is affected. Impacted departments will be notified that restoration of past data archives will not be available. A migration plan for past data fabrics should be considered by the Departments.