

US EPA ARCHIVE DOCUMENT

RI: Update on Critical Elements Evaluation

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NEAEB 2009





Critical Technical Elements Evaluation

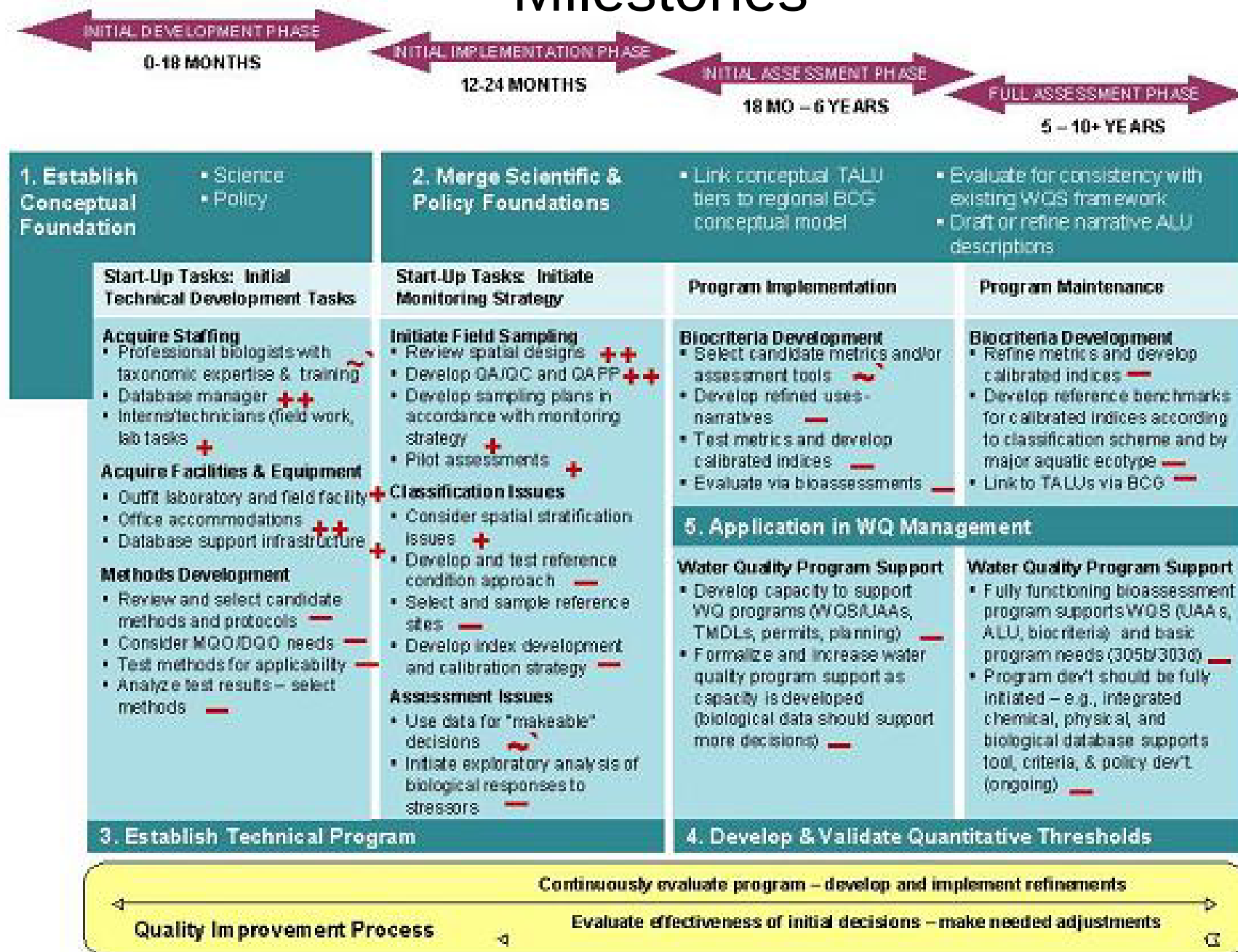
Fall 2007: Program Evaluation

Spring 2008: Initial Data Analysis Report
Technical Memo

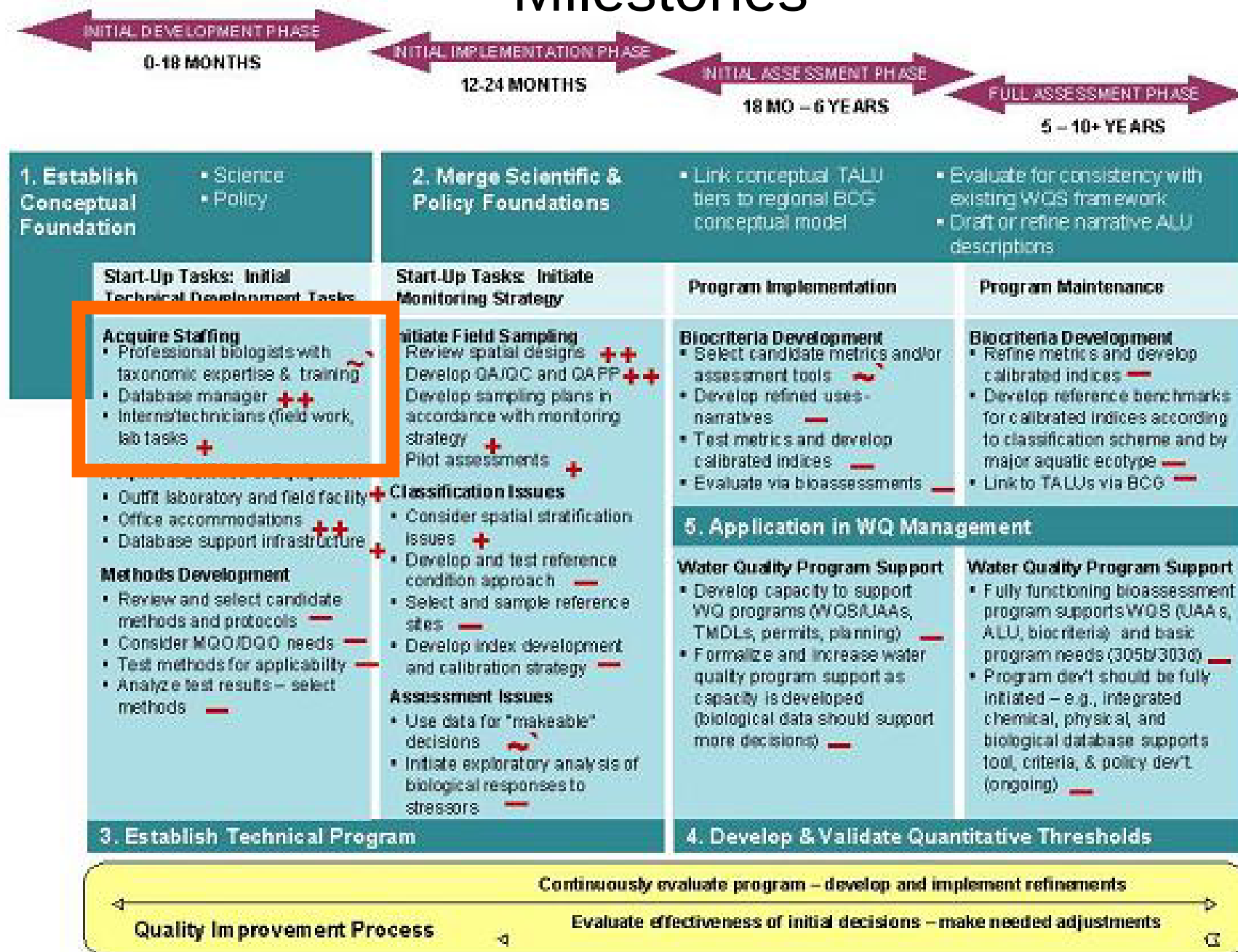
Spring 2009: Update



Milestones



Milestones





Start up Tasks

Initial Technical Development:

Acquire Staffing

- Professional Biologist (1)



Start up Tasks

Initial Technical Development:

Acquire Staffing

- Professional Biologist (1)





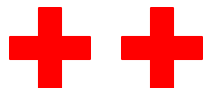
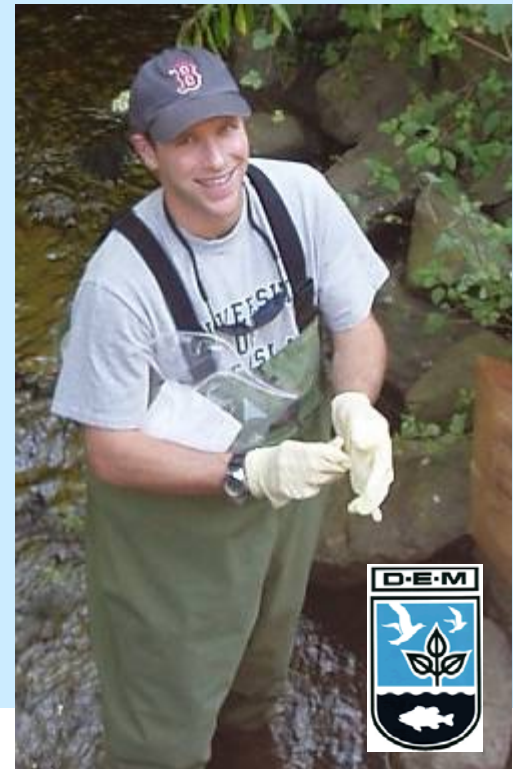
Start up Tasks

Initial Technical Development:

Acquire Staffing

- Professional Biologist (1)
- Database Manager (1)

++



Fully Implemented



Partially Implemented



Needs Refinement



Not Started



Start up Tasks

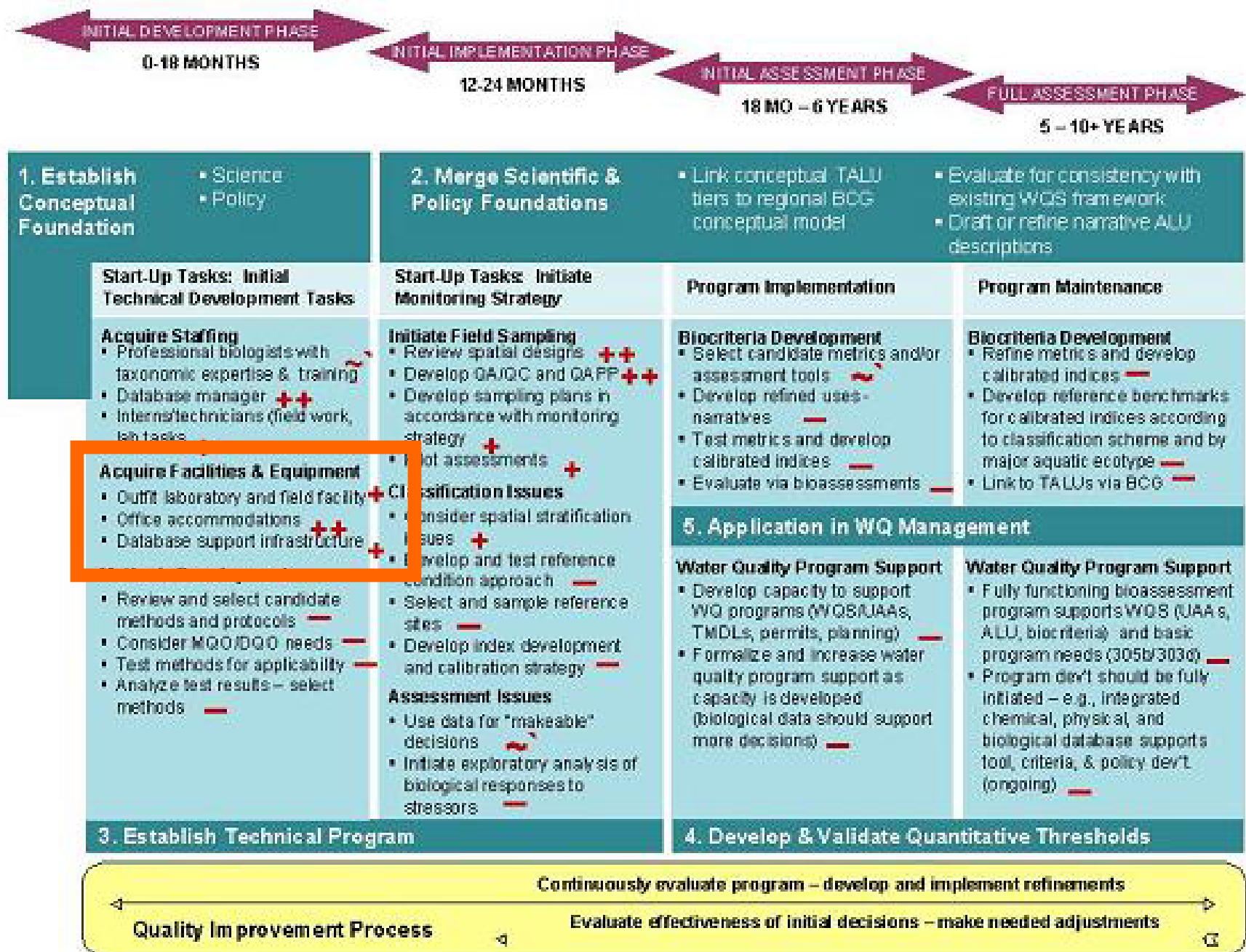
Initial Technical Development:

Acquire Staffing

- Professional Biologist ()
- Database Manager (1)
- Seasonal Technician (2) +



Milestones





Start up Tasks

Initial Technical Development:

Acquire Facilities and Equipment

  Fully Implemented  Partially Implemented  Needs Refinement  Not Started



Start up Tasks

Initial Technical Development:

Acquire Facilities and Equipment

- Office Accommodations

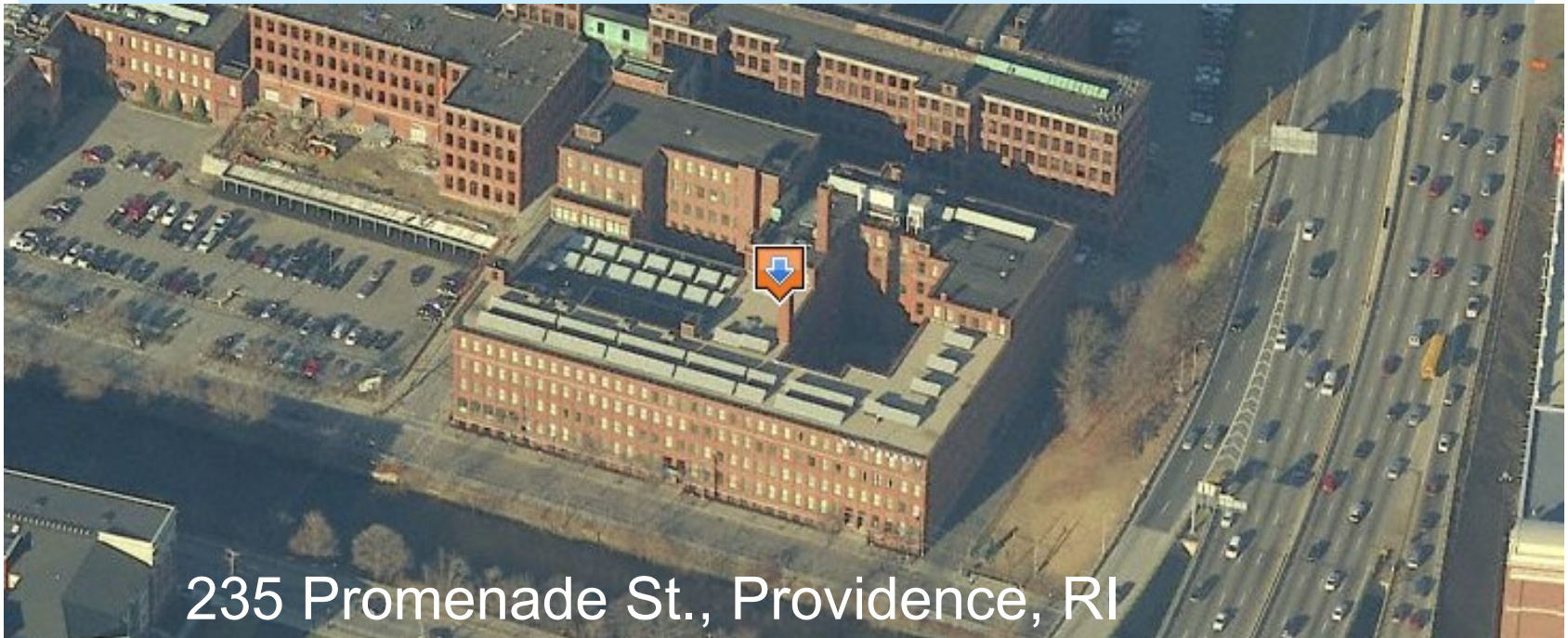


Start up Tasks

Initial Technical Development:

Acquire Facilities and Equipment

- Office Accommodations **+** **+**



235 Promenade St., Providence, RI



Start up Tasks

Initial Technical Development:

Acquire Facilities and Equipment

- Outfit Lab & Field Facility



Start up Tasks

Initial Technical Development:

Acquire Facilities and Equipment

- Outfit Lab & Field Facility  



Fully Implemented



Partially Implemented



Needs Refinement



Not Started



Start up Tasks

Initial Technical Development:

Acquire Facilities and Equipment

- Data Management Infrastructure



Start up Tasks

Initial Technical Development:

Acquire Facilities and Equipment

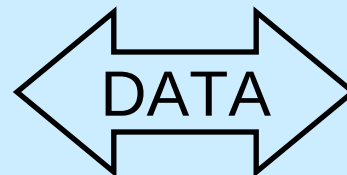
- Data Management Infrastructure

Rhode Island

RI BIOQUAL

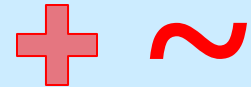
SWIMS

State Water Information
Management System

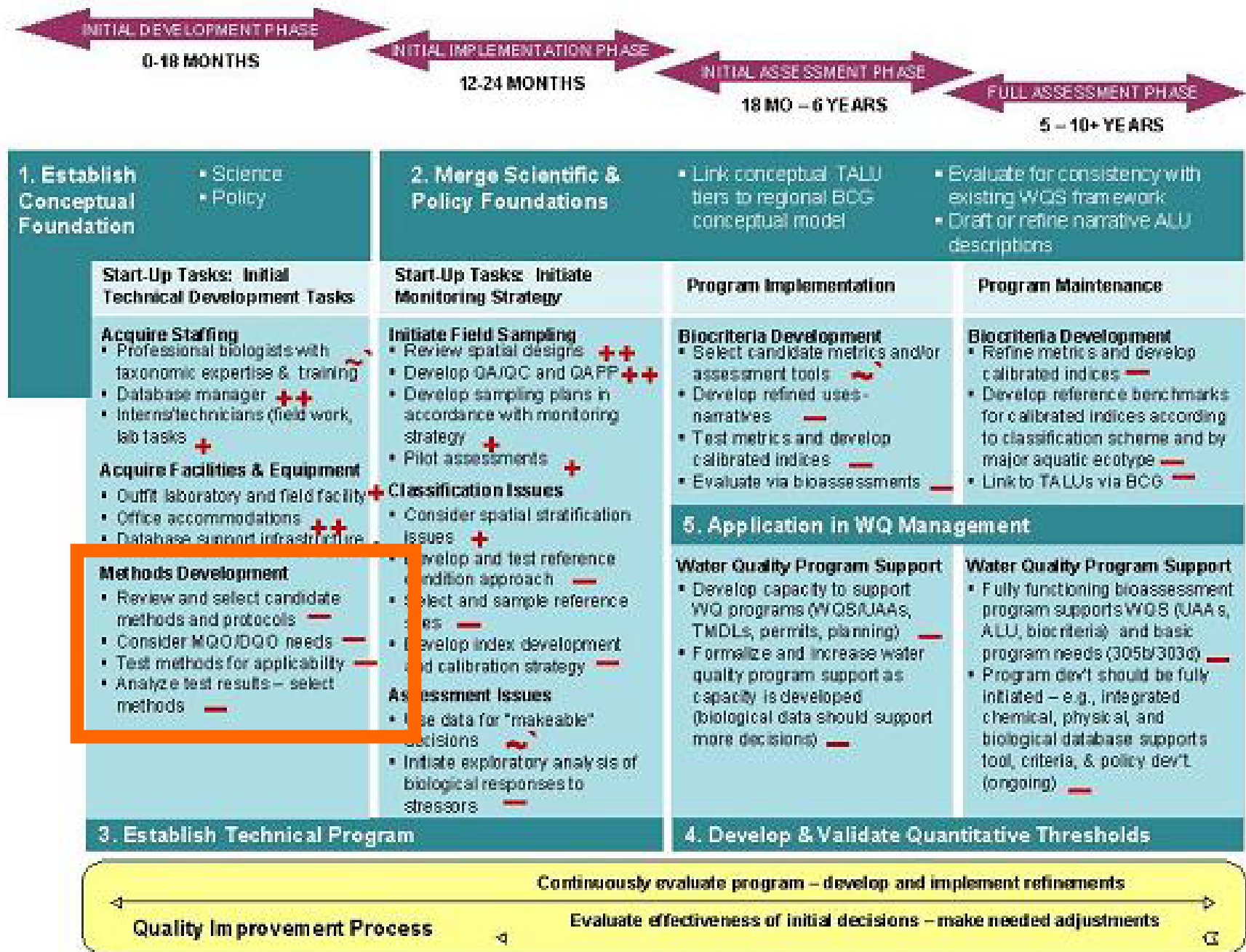


EDAS

Biomonitoring
Database



Milestones





Start up Tasks

Initial Technical Development:

Methods Development

  Fully Implemented  Partially Implemented  Needs Refinement  Not Started

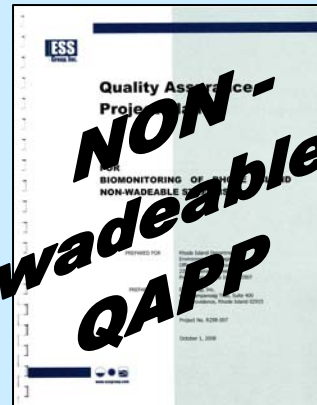
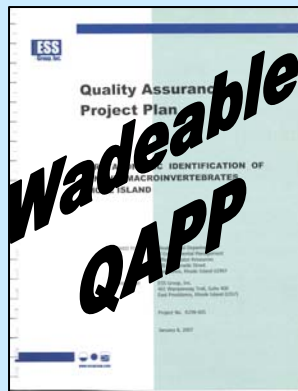


Start up Tasks

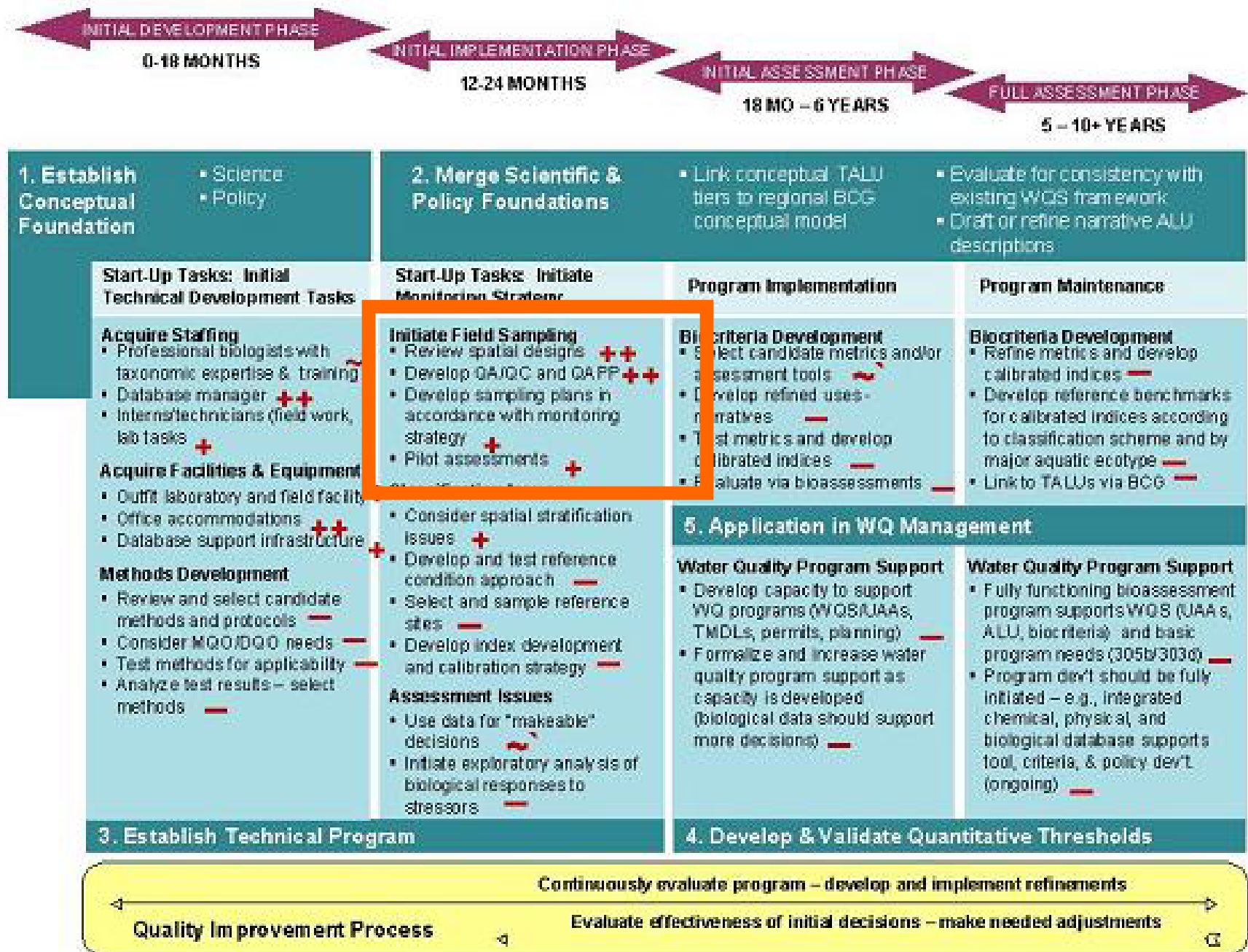
Initial Technical Development:

Methods Development

- Review and Select Candidate Methods +
- Consider MQO / DQO needs +
- Test methods for applicability ~
- Analyze test results - Select Methods ~



Milestones





Start up Tasks

Initiate Monitoring Strategy:

Initiate Field Sampling

  Fully Implemented  Partially Implemented  Needs Refinement  Not Started



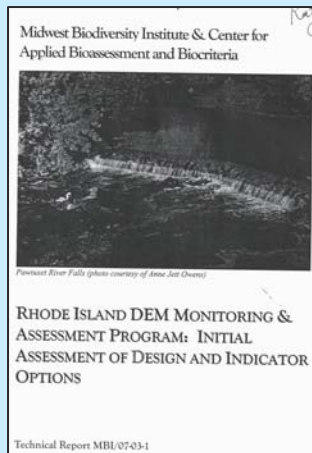
Start up Tasks

Initiate Monitoring Strategy:

Initiate Field Sampling

- Review spatial designs ++

MBI (2003) *Initial Assessment of Design and Indicator Options*





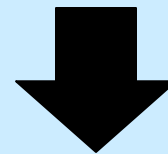
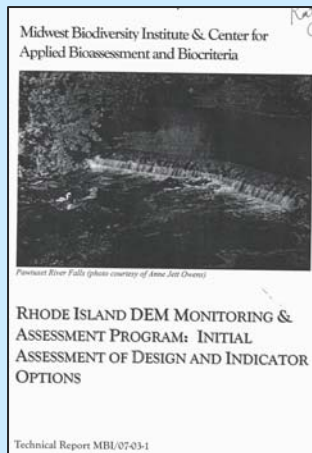
Start up Tasks

Initiate Monitoring Strategy:

Initiate Field Sampling

- Review spatial designs ++

MBI (2003) *Initial Assessment of Design and Indicator Options*



Geometric Sampling Design &
Five -Year Rotating Basin Approach

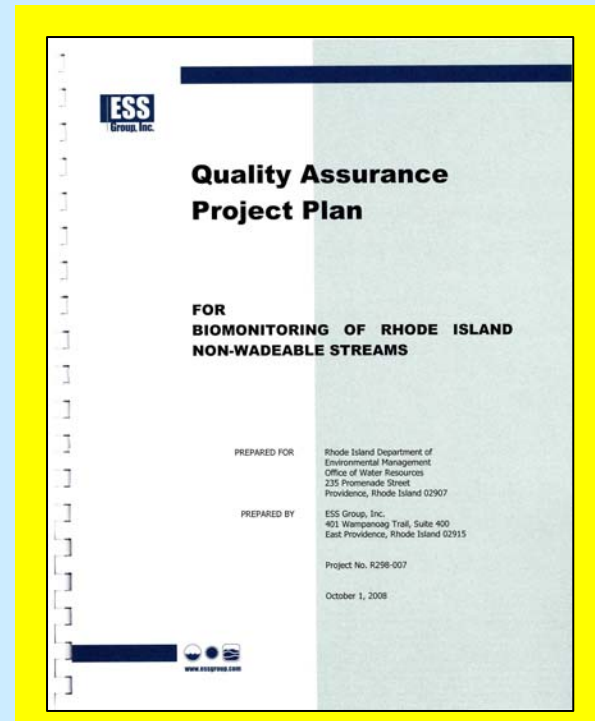


Start up Tasks

Initiate Monitoring Strategy:

Initiate Field Sampling

- Develop QA/QC and QAPP **+** **+**



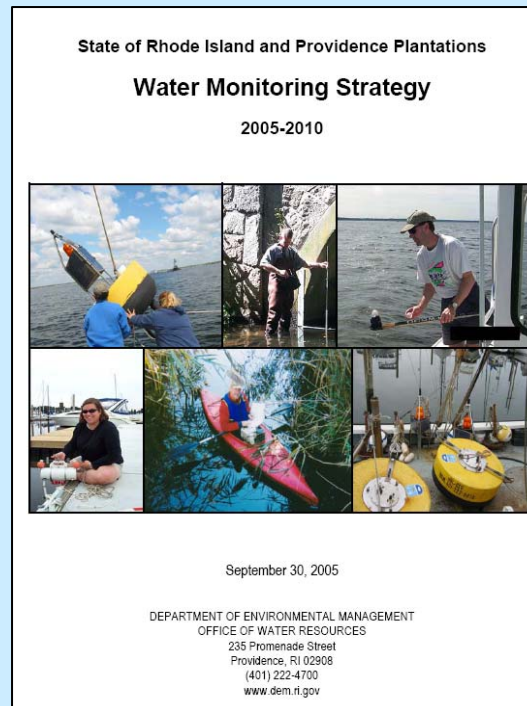


Start up Tasks

Initiate Monitoring Strategy:

Initiate Field Sampling

- Develop sampling plan w/ monitoring strategy +





Start up Tasks

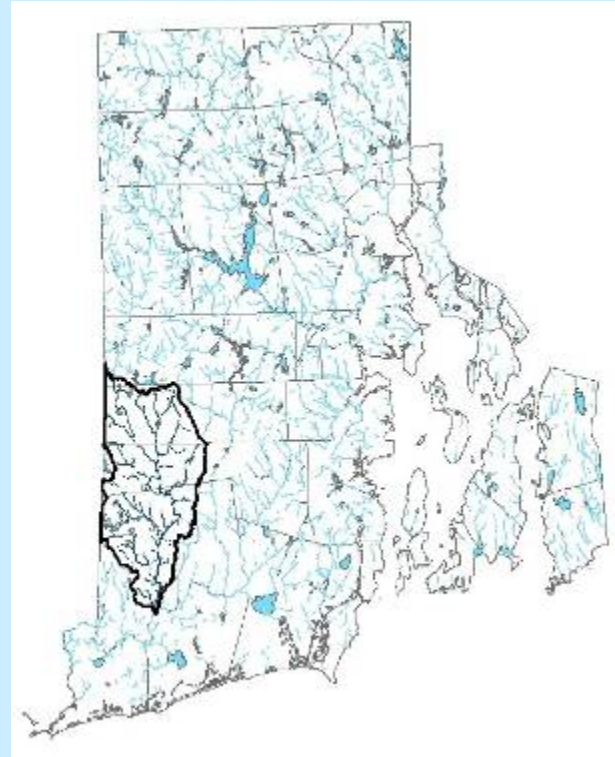
Initiate Monitoring Strategy:

Initiate Field Sampling

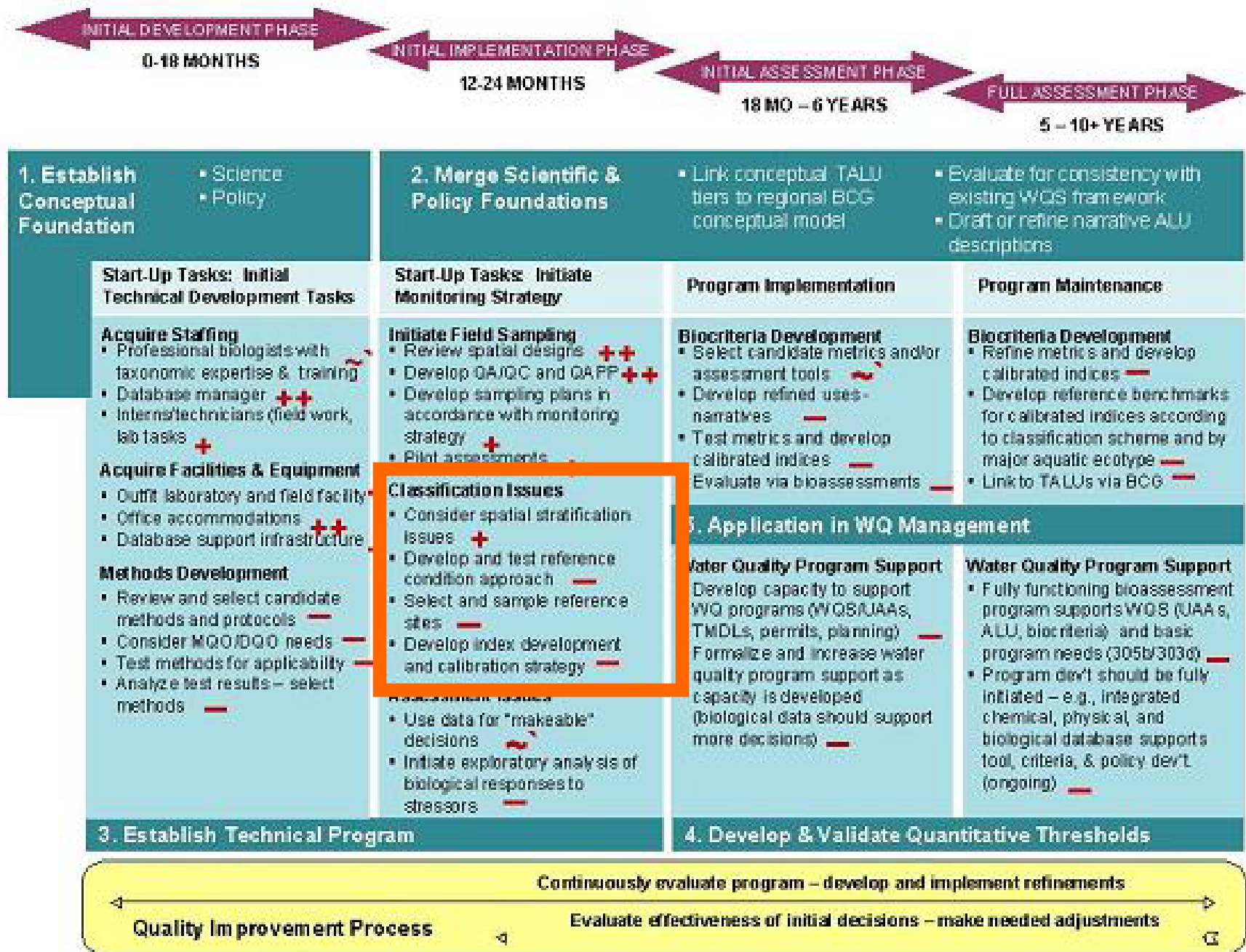
- Pilot assessments  

Wood River Basin
2004

Used in 2008 integrated report



Milestones





Start up Tasks

Initiate Monitoring Strategy:

Classification Issues

  Fully Implemented  Partially Implemented  Needs Refinement  Not Started



Start up Tasks

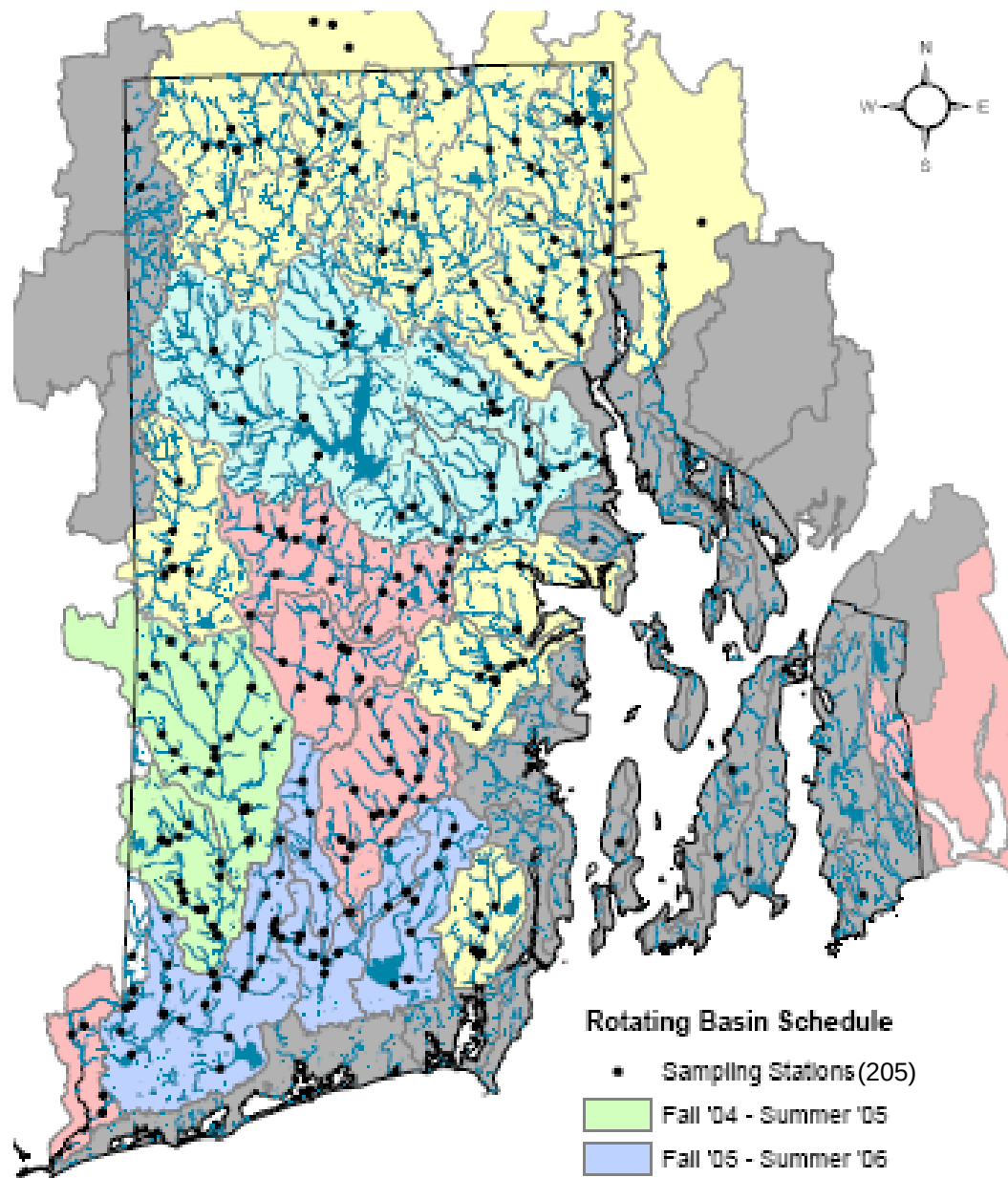
Initiate Monitoring Strategy:

Classification Issues

- Spatial Stratification 

Geometric Sampling Design

Rotating basin approach



Rotating Basin Schedule

- Sampling Stations (205)

Fall '04 - Summer '05

Fall '05 - Summer '06

Fall '06 - Summer '07

Fall '07 - Summer '08

Fall '08 - Summer '09

RI streams do not drain more than 10 miles

0 4 8 16 Miles



Start up Tasks

Initiate Monitoring Strategy:

Classification Issues

- Spatial Stratification +

+ + Fully Implemented + Partially Implemented ~ Needs Refinement ■ Not Started



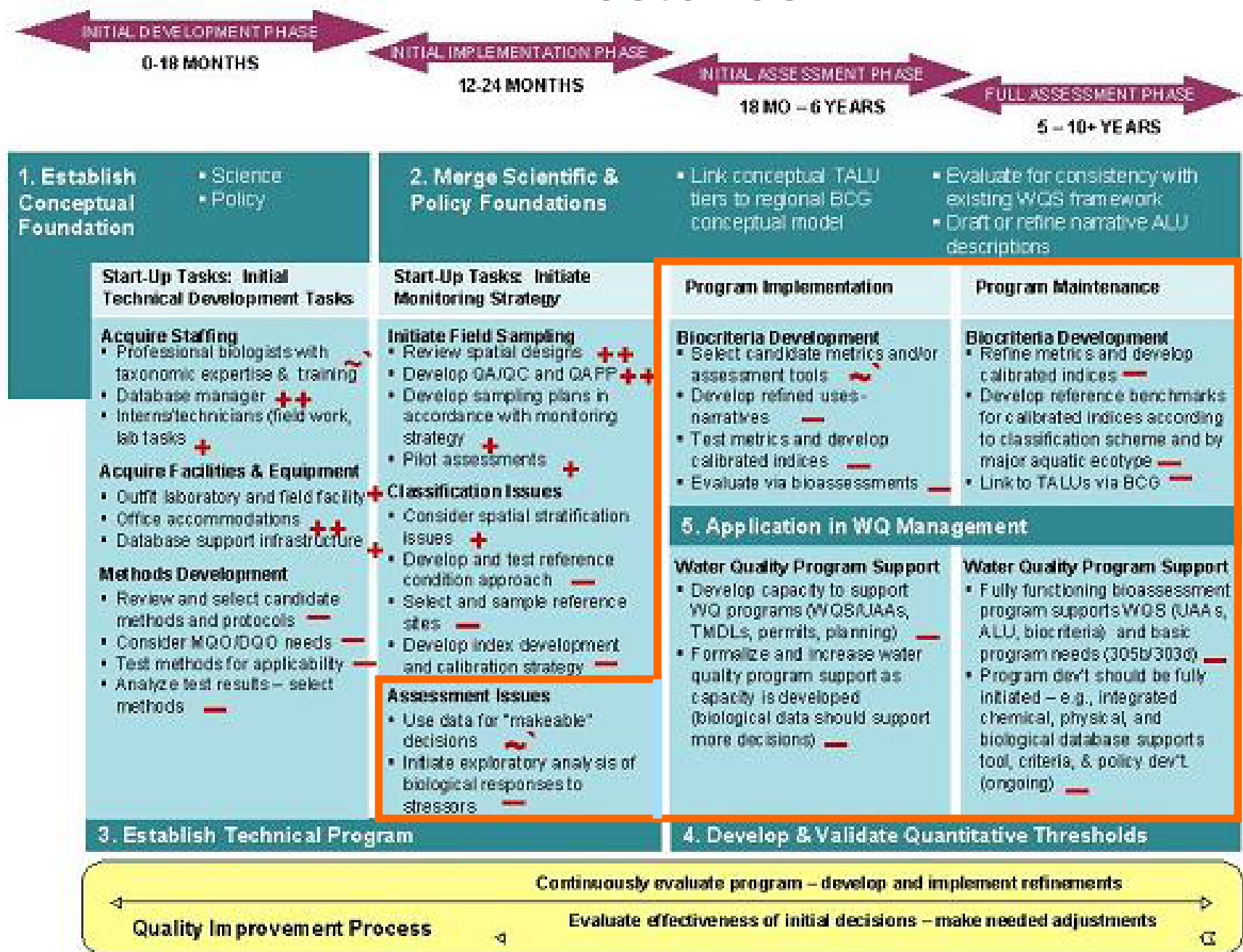
Start up Tasks

Initiate Monitoring Strategy:

Classification Issues

- Spatial Stratification 
- Develop and test reference condition 
approach
- Select and sample reference sites 
- Plan index development and calibration
strategy 

Milestones





Next Steps:

- Develop and test reference condition approach



Next Steps:

- Develop and test reference condition approach
- Select and sample reference stations
 - Delineate all station drainages (StreamStats / GIS)
 - Identify all station characteristics (LU, impervious, geomorphology etc...)
 - Select reference stations



Next Steps:

- Develop and test reference condition approach
- Select and sample reference stations
 - Delineate all station drainages (StreamStats / GIS)
 - Identify all station characteristics (LU, impervious, geomorphology etc...)
 - Select reference stations
- Plan index development and calibration strategy
 - Update EDAS (BioQUAL) & migrate data

Technical Element	Fall 2007	Spring 2009	Working on
1. Temporal Coverage	3.5	3.5	4.0
2. Spatial Coverage	4.0	4.0	4.0
3. Natural Classification	2.5	2.5	2.5
4. Criteria for Reference Sites	3.0	3.0	5.0
5. Reference Conditions	2.0	2.0	4.0
6. Taxonomic Resolution	3.5	3.5	4.0
7. Sample Collection	3.5	3.5	3.5
8. Sample Processing	4.0	4.0	4.0
9. Data Management	3.0	3.0	4.5
10. Ecological Attributes	2.5	2.5	3.5
11. Biological Endpoints and Thresholds	2.0	2.0	3.0
12. Diagnostic Capability	2.0	2.0	3.0
13. Professional Review and Documentation	2.0	2.0	2.0
Total Score (Percent)	37.5 (63%)	37.5 (63%)	47 (78%)
Program Level	1	1	2



Start up Tasks

Initiate Monitoring Strategy:

Assessment Issues

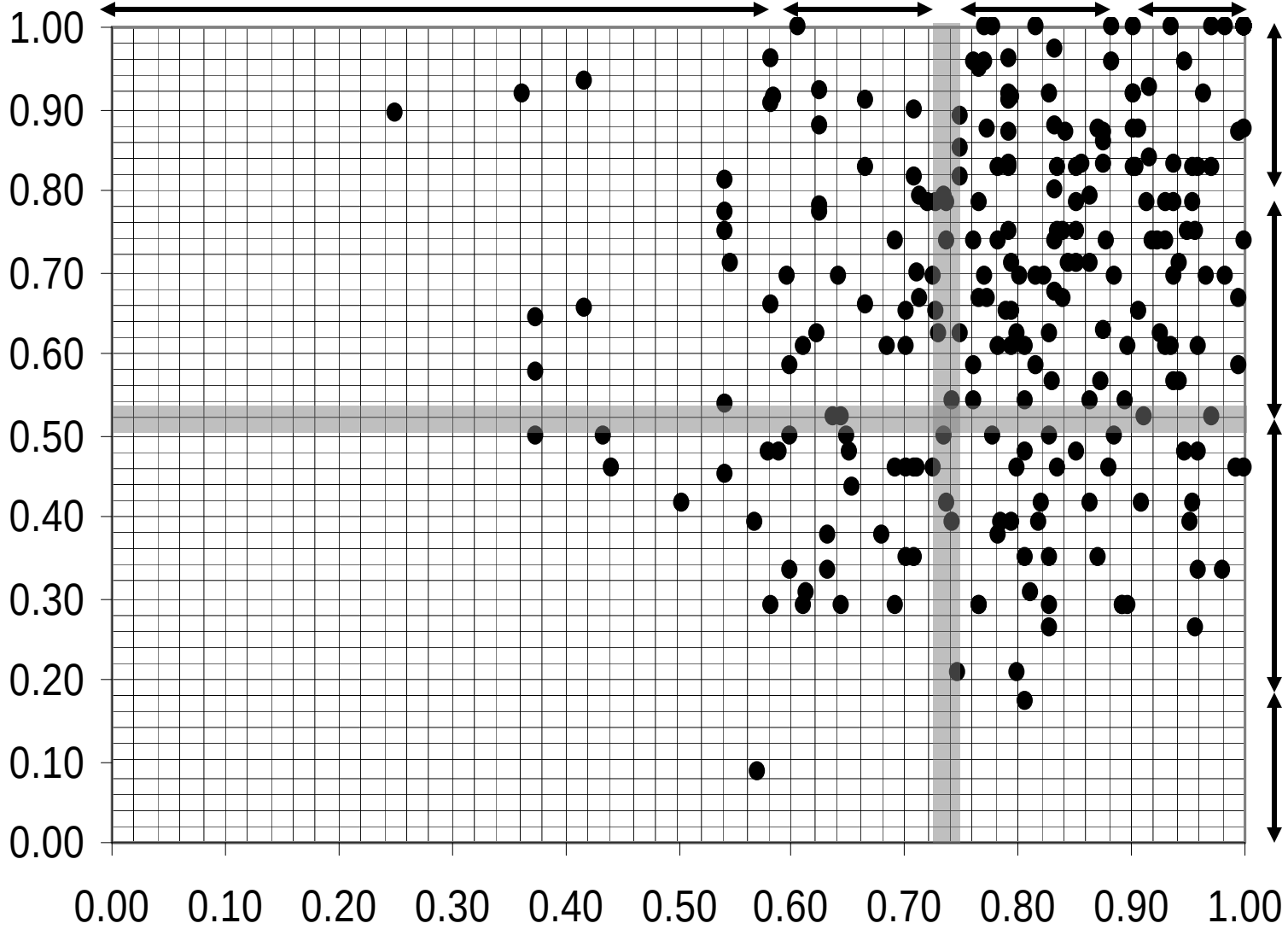
- Use data for “makeable” decisions 

2002-2007 Data Points (n=267)

Habitat Assessment Categories

Non-supporting Partially Supporting Supporting Comparable to Reference

Biological Index Score (% Reference)



Biological Condition Categories



Habitat Assessment Categories

Non-supporting

Partially
Supporting

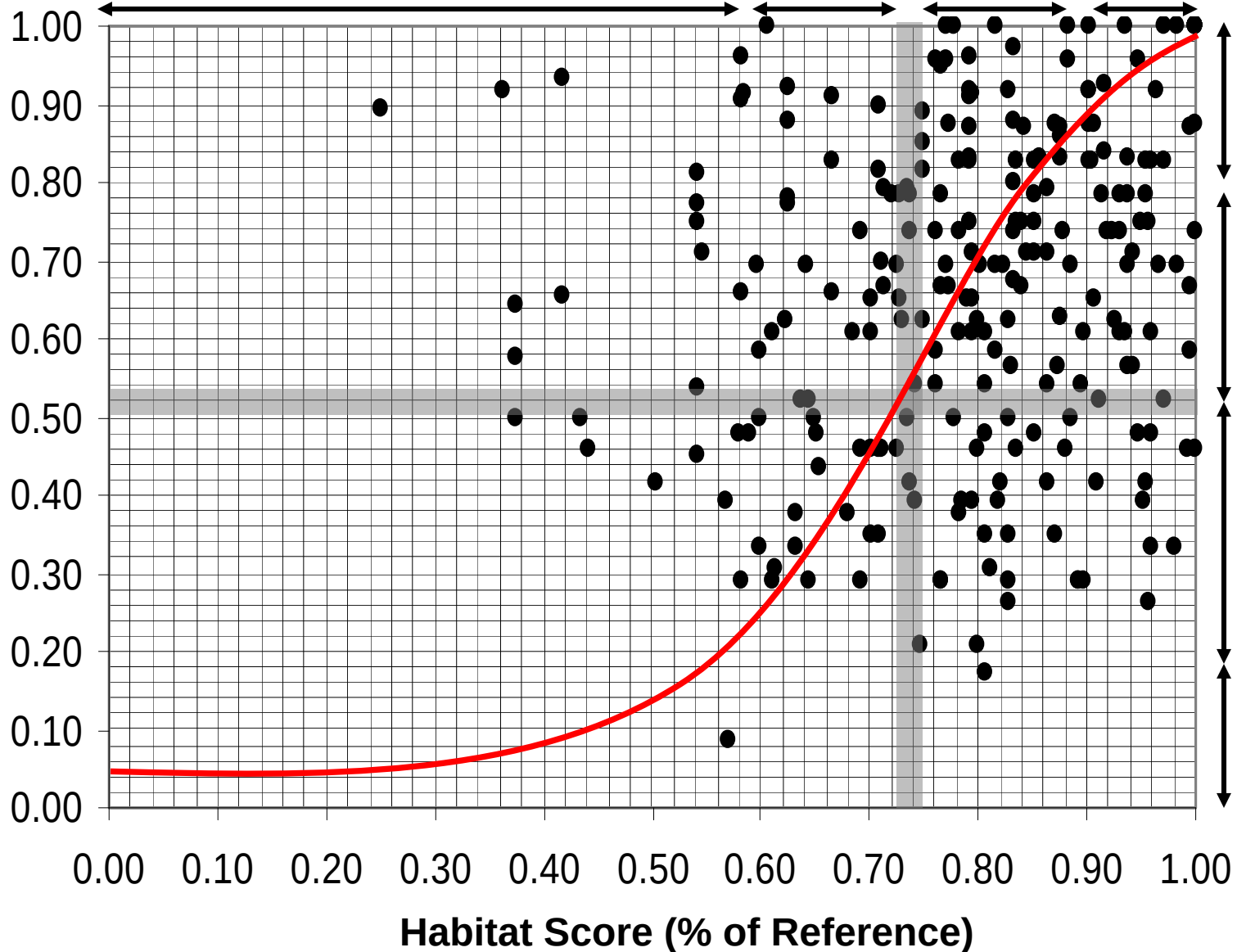
Supporting

Comparable
to Reference

Biological Index Score (% Reference)

Biological Condition Categories

Non-impaired
Slightly-impaired
Moderately impaired
Severely impaired





Habitat Assessment Categories

Non-supporting

Partially
Supporting

Supporting

Comparable
to Reference

Biological Index Score (% Reference)

Biological Condition Categories

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