ICR Supporting Statement

Information Collection Request: Cooling Water Intake Structures New Facility Final Rule (Renewal)

OMB Control No. 2040-0241, EPA ICR No. 1973.06

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United States Environmental Protection Agency
Office of Wastewater Management
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Contents

A. Justification

1. Explain the circumstances that make the collection necessary and explain the legal or administrative requirements relevant to the collection and attach a copy of the statute or regulation authorizing the collection

Section 316(b) of the Clean Water Act (CWA) provides that "[a]ny standard established pursuant to [CWA section 301] or [CWA section 306] and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact." The section 316(b) New Facility Rule (66 FR 65256; December 18, 2001) and minor amendments (68 FR 36749; June 19, 2003) implement section 316(b) of the CWA as it applies to new facilities that use cooling water intake structures (CWISs).[1] The rule requires new facilities to submit several distinct types of information as part of their National Pollutant Discharge Elimination System (NPDES) permit application. In addition, the rule requires new facilities to maintain monitoring and reporting data as outlined by the Director[2] in their NPDES permits. The information requirements in this Information Collection Request (ICR) are necessary to ensure that new facilities are complying with the rule's provisions, and thereby minimizing adverse environmental impact resulting from impingement and entrainment losses of fish and other aquatic organisms due to the withdrawal of cooling water.

The first ICR approval period covering years 1 through 3 after promulgation expired in February 2005. The first ICR renewal period covering years 4 through 6 after promulgation expired in June 2008. The second ICR renewal period covering years 7 through 9 after promulgation expired in December 2011. The third ICR renewal period covering years 10 through 12 after promulgation will expire in December 2015. This Supporting Statement is for the fourth renewal ICR, covering years 13 through 15 after promulgation.

2. Indicate how, by whom and for what purpose the information is to be used

This ICR covers information that must be submitted to NPDES permitting authorities (i.e., Directors) and data that must be collected and maintained on-site by new facilities as defined in 40 CFR 125.83. NPDES permits are issued for no more than five years. NPDES application information for new or reissued permit must be submitted in accordance with the timelines outlined in 40 CFR 122.21.

[1] See Appendix C for a copy of the Federal Register notices for these regulations authorizing the information collection.

[2] Director is the permitting authority and refers to the Regional Administrator or the State Director, as the context requires, or an authorized representative. When there is no "approved State program," and there is an EPA administered program, "Director" means the Regional Administrator. When there is an approved State program, "Director" normally means the State Director. In some circumstances, however, EPA retains the authority to take certain actions even when there is an approved State program. (For example, when EPA has issued an NPDES permit prior to the approval of a State program, EPA may retain jurisdiction over that permit after program approval.) In such cases, the term "Director" means the Regional Administrator and not the State Director.

New facilities are required to submit information outlined in 40 CFR 125.86 when applying for their new or reissued NPDES permit. New facilities are also required to maintain their monitoring and reporting data as outlined in their NPDES permit. Each new facility maintains facility-level records of the measurements, diagrams, and calculations submitted to the Director, as well as the analytical results of monitoring activities. There are multiple options for new facilities to submit the information outlined in 40 CFR 125.86. There are no forms for collecting the information. Directors are primarily responsible for determining how new facilities submit the required information. Much of this information may take the form of reports, descriptions, narratives, engineering plans, and monitoring data related to the intake, cooling system and source water biology. A major component of this information collection burden is associated with the initial permit application process. Permits are renewed every five years. During subsequent permit renewals, information collection burden is significantly reduced and primarily serves to confirm that the original data submission remains valid and also identify any relevant changes.

While respondents for this ICR would include any new facilities that meet the applicable requirements of the rule, EPA estimates that there are six primary industrial sectors that account for more than 99 percent of all cooling water used in the United States: 1) traditional steam electric utilities, 2) nonutility power producers, 3) manufacturers in SIC Major Group 26 (paper and allied products), 4) manufacturers in SIC Major Group 28 (chemicals and allied products), 5) manufacturers in SIC Major Group 29 (petroleum and coal products, and 6) manufacturers in SIC Major Group 33 (primary metals). A detailed description of the SIC (and NAICS) codes can be found at 66 FR 65257.

New facilities may comply using one of two alternatives referred to as Track I and Track II. Track I involves the use of a cooling system that reduces flow in a manner that is equivalent to a closed cycle recirculating cooling system (CCRS) and a requirement that the maximum intake velocity is less than 0.5 fps. Track II involves construction of impingement and entrainment reduction control technologies that when combined achieve comparable performance to CCRS. Track II facilities have additional requirements for conducting biological characterization studies, engineering studies and related monitoring. Some of the major items for which burdens were estimated are listed in Table 2.1.

Table 2.1 Summary of Major Data Collection Requirements

Information Collection Requirement	Track	Frequency	Content
Source Water Baseline Biological Characterization Data	Track I	Once	Summary of data
Source Water Physical and Intake Structure Design Data	Track I & II	Once	Summary of data
CWIS Flow Reduction Requirements	Track I	Once	Description of the cooling water system flow reduction
CWIS Velocity Requirements	Track I	Once	Description of intake with engineering calculations
Design and Construction	Track I	Once	Description of the system design

Information Collection Requirement	Track	Frequency	Content
Technology Plan			that demonstrates compliance
Comprehensive Demonstration Study Plan	Track II	Once	Study demonstrating that selected technologies and operational measures meet requirements
Source Water Baseline Biological Characterization Study	Track II	Once	Biological study
Verification Monitoring Plan	Track II	Once	Monitoring plan
Verification Study	Track II	Once	Two year monitoring results
Initial Biological Monitoring for Impingement and Entrainment	Track I & II	Once	Monitoring data
Reduced Biological Monitoring	Track I & II	Recurring	Monitoring data
Permit Renewal Application Activities	Track I & II	Every 5 years	Update of initial permit application information
Source Water Biological Characterization Study	Track I & II	Every 5 years	Updated monitoring data

Information collected will be used by new facilities, Directors, EPA, and other stakeholders. New facilities may use it to monitor their CWIS performance and monitor the performance of design and construction technologies. The primary users of this information will be Directors, states authorized to administer the NPDES permitting program and EPA Regions. Since section 316(b) standards are implemented through NPDES permits, the rule affects Directors in a manner similar to other changes to NPDES program requirements. There are currently 46 States and one territory authorized under CWA Section 402(b) to implement the NPDES permit program. In non-authorized states, EPA assumes the role of the Director.

The Director will use the information to verify that the NPDES permit application is complete, assess whether the compliance alternative selected by the facility is appropriate, and to evaluate monitoring data, annual reports, and other information to confirm that the facility remains in compliance throughout its permit term. The Director may also use the information to develop special permit conditions, such as additional protections for endangered species.

Much of the basic information obtained from a facility's NPDES permit application is stored in EPA's Integrated Compliance Information System (ICIS), the Agency's modernized NPDES program database. ICIS is used to track permit limits, permit expiration dates, monitoring data, and other data, and provide EPA with a nationwide inventory of permit holders. EPA Headquarters uses the information contained in the ICIS database to develop reports on permit issuance, backlog, and compliance rates. The Agency also uses the information to respond to public and Congressional inquiries, develop and guide its policies, formulate its budgets, assist States in acquiring authority for permitting programs, and manage the NPDES program to ensure

national consistency in permitting.

It is also anticipated that other government agencies, both at the state and federal level, as well as public interest groups, private companies, and individuals will also use the data. Environmental and citizen groups are expected to use the data collected under the final rule to independently assess impingement and entrainment rates for affected water bodies. In addition, the data will be useful for the scientific community for assessing the impact of CWISs on recreational and commercial fisheries productivity and aquatic ecosystem health.

3. Describe whether and to what extent the collection involves the use of automated processes or information technology to aid with the collection

The Agency does not currently require the use of information technology for collection of information from new facilities. Directors are primarily responsible for determining which collection method and information management strategy is most appropriate.

On July 30, 2013, EPA proposed the Clean Water Act National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, which will require electronic reporting of NPDES information rather than the currently-required paper-based reports. On December 1, 2014, EPA published a Supplemental Notice to the 2013 proposed NPDES Electronic Reporting Rule to provide an opportunity for EPA to receive additional comment regarding issues raised by commenters during the public comment period for the proposed rule and discuss possibilities for how EPA might modify the rule to address issues raised by stakeholders. Once the final rule is issued, implementation is expected to be phased in over a period of several years. EPA does not anticipate that the Electronic Reporting Rule will be finalized and implemented within the three year timeframe of this ICR. However, EPA does anticipate that the implementation of the Electronic Reporting Rule in future years will reduce reporting burdens for all entities involved. In general, the content of the various new and renewal permit application data submissions is site-specific and does not lend itself to the use of standardized forms. The required documents include reports, descriptions, narratives, engineering plans, and monitoring data that will frequently be submitted in an electronic format, reducing the burden for preparation, handling, and receipt of printed materials. Also, more standard submissions such as compliance status reports can be entered directly into NPDES-ICIS, reducing the burden associated with compiling and transmitting this information.

4. Describe the efforts to identify duplication

There is no duplication, as there are no other sources available to collect this information.

5. Explain whether or not the collection impacts small entities

This information collection will not have a significant impact on a substantial number of small entities. The term “new facility” is subject to the rule if it meets the applicability requirements in 40 CFR125.81. The rule’s minimum intake flow requirements would exclude most new small

entities from the compliance requirements. As a result, the rule is expected to affect only a small absolute number of facilities owned by small entities. In 2001, EPA estimated that over the next 20 years eleven facilities owned by small entities are projected to be subject to the final 316(b) regulation. The exact number of facilities owned by small entities that would be subject to the rule annually is difficult to quantify. If any small entities would be affected, it is estimated one to two new respondents that are small entities will be added for this three year ICR renewal period resulting in an estimated total of nine respondents that are small entities.

6. Describe the consequences to the program if the collection is not conducted or is conducted less frequently

The purpose of the 316(b) regulation is to minimize the adverse environmental impact from the location, design, construction and operation of the CWIS. EPA interprets Section 316(b) to require the Agency to establish a standard that will best minimize impingement and entrainment mortality – the main adverse effects of cooling water intake structures. Failure to implement this regulation through collection of this data would result in a significant adverse environmental impact to the biological community within the source water. Permitted facilities must reapply for NPDES permits before their existing permits expire, typically once every five years. The CWA prohibits NPDES permits from having terms longer than five years. Less frequent permit applications would not provide the permitting authority with sufficiently current data to establish effective limitations or conditions when reissuing permits and to identify, in a timely manner, adverse environmental impact resulting from the operation of new CWISs. In addition, less frequent collection would also hinder the ability of EPA, States, and facility operators to take advantage of technological improvements in impingement and entrainment technologies as they occur, or to track long-term trends.

The data collection is mandatory and the consequences of not collecting the information would result in a failure of the regulated facilities and/or control authorities to comply with the authorizing NPDES regulations. Failure to comply could result in enforcement actions including civil or criminal penalties.

7. Explain any special circumstances associated with "extraordinary burden" placed on respondents

There are no special circumstances where "extraordinary burden" is placed on respondents. The collection of information is conducted in a manner consistent with the Paperwork Reduction Act guidelines at 5 CFR 1320.5(d)(2). Requests for supplemental information for the purposes of emergency response or enforcement activities are exempt from the Paperwork Reduction Act requirements.

8. Provide a copy and identify the date and page number of the notice in the Federal Register

This renewal ICR was published in the Federal Register on October 5, 2015 (80 FR 60142). The notice included a request for comments on the content and impact of these information collection requirements on the regulated community. EPA did not receive any comments on this ICR.A copy of the Federal Register Notice can be found in Appendix C.

Minimum data collection requirements are mandated and specifically defined by the regulations authorizing collection are not subject to change through consultation. These requirements are often incorporated into the NPDES permit. The Directors of NPDES programs are primarily responsible for determining which collection method and information management strategy is most appropriate. During the initial NPDES permit development and during permit reissuance which occurs every five years a consultation occurs between the Director and permittee. During this consultation, the permittee has the opportunity to request clarification of instructions, recordkeeping, disclosure, or reporting format and to request changes to the data requirements and the frequency of collection and reporting that may be warranted by changing circumstances. Specific changes can then be incorporated in the renewed permit. This consultation occurs on an individual basis with each respondent. The permit renewal five year frequency is mandated by the regulation. However, during the interim period the permittee may consult with the Director if significant changes to circumstances of the permittee occur, and, if warranted, the director may enact modifications to the permit.

Additionally, in 2001 EPA finalized the section 316(b) New Facility Rule after conducting outreach activities and considering comments from the public and the regulated community. (See 66 FR 65256, December 18, 2001.) EPA Headquarters staff responsible for program oversight were contacted to provide revised information and data for this ICR.

9. Explain any decision to provide compensation to respondents

No payments or gifts are provided to respondents.

10. Describe any assurance of confidentiality provided to respondents

Applications for an NPDES permit may contain confidential business information. However, EPA does not consider the specific information being requested by the final rule to be typical of confidential business or personal information. If a respondent does consider this information to be of a confidential nature, the respondent may request that such information be treated as confidential. All confidential data will be handled in accordance with 40 CFR 122.7, 40 CFR part 2, and EPA's Security Manual part III, chapter 9, dated August 9, 1976.

11. Provide additional justification for any questions of a sensitive nature

Questions of a sensitive nature are not found in this information collection.

12. Provide estimates of the hour burden of the collection of information

The annual average reporting and record keeping burden for the collection of information by facilities responding to the section 316(b) New Facility Rule is estimated to be an annual average of 144,570 hours of burden which is equal to 1,475 hours per private respondent when divided among an anticipated annual average of 98 facilities. The Director reporting and record keeping

burden for the review, oversight, and administration of the rule is estimated to be an annual average of 7,219 hours which is equal to an average 154 hours per respondent when among an anticipated 47 States. The total annual average burden for respondents and States combined is 151,789 hours. The frequency of responses varies between activities; some activities are conducted weekly, while others are conducted annually. Appendix A provides a more detailed presentation of the calculations for deriving estimated hourly burden and its components. Appendix B provides a description of the information collected and methodology for estimating respondent burden and costs. Table 12.1 summarizes the labor burden and associated costs.

Table 12.1 Summary of Labor Burden and Costs

	Average Annual Respondents	Average Annual Total Burden (hours)	Average Annual Total Labor Costs (2014$)
Facilities	98	144,570	$9,183,766
State Directors	47	7,219	$365,966
Totals	**145**	**151,789**	**$9,549,732**

13. Provide an estimate of the total annual cost burden to respondents

The non-labor costs for facilities and Directors are the total annual hours and costs collectively incurred for all activities during the 3-year period covered by this ICR. Table 13.1 provides a summary of the average annual number of respondents, burden hours, and costs. A more detailed summary of the calculations can be found in Appendix A Exhibit A.11 and the methodology used to derive costs can be found in Appendix B.

Table 13.1. Summary of Average Non-labor Costs for Facilities and Directors for the 3-Year Period Covered by this ICR

	Average Annual Respondents	Average Annual Capital Costs (2014$)	Average Annual O&M Costs (2014$)	Total Average Annual Costs (2014$)
Facilities	98	$605,827	$1,654,813	$2,260,640
State Directors	47	$0	$7,088	$7,088
Totals	**145**	**$605,827**	**$1,661,901**	$2,267,728

14. Provide an estimate of the annualized cost to the federal government

There are 47 States and Territories authorized to administer the NPDES permitting program. For new in-scope facilities applying for permits in the 10 unauthorized States and Territories, EPA will incur the costs and burdens similar to those incurred by States with permitting authority. This analysis, however, assumes that facilities complying with the rule during the ICR period will be in NPDES authorized States.

EPA also periodically reviews NPDES permits as part of ongoing permit program oversight. Based on historical reports submitted for 316(b) demonstrations, EPA assumes that it will take

approximately 30 hours to perform a detailed review, make comments, and follow up on comments for the 316(b) portions of a State-issued NPDES permit. Table 14.1 summarizes federal burden and cost estimates. Further detail is provided in Exhibit A.4.

Table 14.1 **Summary of Average Annual Respondents, Responses, Burden, and Costs for Federal Agency for the 3-Year Period Covered by this ICR**

	Average Annual Burden (hours)	Average Annual Labor Costs (2014$)	Average Annual O&M Costs (2014$)	Total Average Annual Costs (2014$)
Agency Totals	177	$8,143	$312	$8,455

15. Explain the reasons for any change in burden estimates

This ICR is a renewal of the previous ICR and only reflects revisions to the number of respondents to account for new facilities with cooling water intakes that are constructed. No new or revised information is being sought. The respondent average annual burden increased by 13,368 hours which represents a 10% increase. The total average annual number of respondents are expected to increase by 17 respondents, a 13% increase. The total average cost burden is expected to increase by 10%. Table 15.1 presents a summary of the adjustments in burden estimates from the previously approved ICR. The net adjustments are due to several changes:

- Addition of the newly built facilities: for this 3-year period, 17 new facilities are anticipated to file initial permit application compared to 21 new facilities in the previous ICR, resulting in a reduction in burden. Differences in activities related to these initial permit applications result in a reduction of 7,561 hours for facilities and a reduction of 854 hours for Directors over the previous ICR estimate for this component. The reduction in newly built facilities resulted in a reduction in the cost estimate for new respondents.
- Continued performance of annual activities by facilities that received their permit during previous ICR periods: As new facilities are constructed and permitted, these facilities add to the universe of respondents that are required to perform annual activities under the New Facility Rule as long as they continue to operate a CWIS. Activities related to these recurring activities account for an increase of 19,420 hours for facilities and 933 hours for Directors over the previous ICR estimate.
- Re-permitting burdens: more facilities are entering the renewal phase of their permits (i.e., 5 years after the last permit was issued). Activities related to these re-permitting activities account for 1,522 hours for facilities over the previous ICR estimate.

Table 15.1 Summary of Adjustments in Burden Estimate

Providers of Information	Reason	Previous Burden	New Burden	Difference	Percent Difference	Type of Change
Facilities	Change in the number of respondents	138,421 hours	151,789 hours	13,368 hours	10%	R
Facilities	Change in the number of respondents	128	145	17	13%	R
Facilities	Change in the	$2,520,6	$2,267,7	-$252,940	-10%	R

	number of new respondents	68	28			

PC = Program Change
R = Revised Estimate

16. Outline any plans for tabulation and publication of the information

EPA maintains the compliance data in ICIS, the national computerized management information system that automates entry, updates, and facilitates retrieval of NPDES data and tracks permit issuance, permit limits and monitoring data, and other data pertaining to facilities regulated under NPDES. Permit data can be accessed by the public in one of two ways:

- via the Freedom of Information Act (FOIA) by submitting a request to EPA or the State; or
- via an on-line query using EPA's Envirofacts Data Warehouse and Applications website at http://www.epa.gov/enviro/index.html. Accessing data via Envirofacts provides a method to combine ICIS data with other EPA databases and mapping tools.

17. Explain any requests to not display the expiration date of OMB approval

EPA has not made a request regarding display of the expiration date.

18. Explain any exceptions to the certification statement 5 CFR 1320.9, "Agency Certifications for Proposed Collections of Information."

The agency is able to certify compliance with all provisions under Item 19 of OMB Form 83-I.

B. Statistical Methods (used for collection of information employing statistical methods)

Statistical methods are not used with this collection.

Appendix A – Detailed Results of Respondent Burden and Cost Analysis for the Information Collection Requirements of the Section 316(b) New Facility Rule

(See attached PDF document)

Appendix B – Description of the Information Collected and Methodology for Estimating Respondent Burden and Cost of Collection

The following sections present rationale and results of EPA's estimation of burden and costs for the implementation of the section 316(b) New Facility Rule. The burden hours and cost in this section are calculated by first estimating the annual burden, labor cost, and other direct cost (ODC) per facility or Director for each activity. (See Tables B-1 through B-4.) The number of facilities or Directors required to conduct each of the activities per year are then estimated and used to calculate the yearly burden hours and costs. Not all facilities are required to conduct all the activities, and not all activities occur during all years of the ICR. The total yearly burden hours and costs are then summed and averaged to compute the bottom line average annual burden hours and costs. See Appendix A.

B.1 Estimating Respondent Burden

This section describes the burden estimates for facilities and Directors, as well as the methods used to derive them. Respondent activities are separated into those activities associated with the NPDES permit application and those activities associated with monitoring and reporting after the permit is issued. The reason for this is that the permit cycle is every five years while ICRs must be renewed every three years. Therefore, the application activities occur only once per facility during an ICR period, and so they are considered one-time burden for the purpose of this ICR. By contrast, the monitoring and reporting activities that occur after issuance of the permit occur on an annual basis.

Facility Burdens

Information collection would require in-scope facilities to devote time (i.e., as measured by staff hours) and resources (e.g., copies of documents and report mailings) to produce the necessary NPDES permit applications, implementation plans, and annual status reports. EPA expects that facility employees, including managers, engineers, engineering technicians, statisticians, draftsmen, and clerical staff, will devote time toward gathering, preparing, and submitting the various documents. To develop representative profiles of each employee's relative contribution, EPA assumed burden estimates that reflect the staffing and expertise typically found in manufacturing facilities and power generating plants. In doing this, EPA considered the time and qualifications necessary to complete a variety of tasks: reviewing instructions, planning responses, researching data sources, gathering and analyzing data, typing or writing the information requested, reviewing results, conferring with permitting authorities and expert consultants, and sending documents.

EPA anticipates that facilities will use the contracted services to perform many of their required sampling and analysis tasks. The contracted staff is likely to include project managers, biologists, statisticians, and biological technicians. The work done by these contracted employees will be done on-site on a regular basis. Therefore, the hourly burdens associated with their work are included in the overall burden estimates for each facility.

For each activity burden assumption, EPA selected time estimates to reflect the expected effort necessary to carry out these activities under normal conditions and reasonable labor efficiency rates. EPA assumed that the majority of the actual work performed by facility staff, such as researching, collecting, and analyzing data, as well as writing the documents, will be carried out by junior technical staff. Burdens associated with managerial and senior engineering staff include time for actions such as occasional or seasonal visits to supervise sampling efforts, as well as periodic review of lab results and documentation. EPA assumed that the facilities will employ a drafter to perform computer aided drafting (CAD) operations. For contracted employees, EPA assumes that the majority of the work will be carried out by the biologists and the biological technicians.

Tables B-1 and B-2 provide a summary of the hourly burden estimates for facilities performing the NPDES permit application, annual monitoring, and annual reporting activities associated with the final rule. For a more detailed presentation of hourly burdens for facilities, see Exhibits A.1 and A.2 in Appendix A.

The activities listed in the first column of both Tables B-1 and B-2 correspond to the facility respondent activities. Start-up burden includes reading the published regulations, sample permits, and any guidance materials associated with the rule; determining the required staff and resources necessary to successfully complete the application process and meet all annual monitoring and reporting requirements; and training staff to perform tasks that they would not be required to conduct if the rule were not implemented. General information activities refer to the development and submittal of documentation on source waterbody characteristics and CWIS location and design.

As part of the permit application process, facilities will demonstrate compliance with the proportional flow (i.e., intake flow may not exceed a certain proportion of source water body flow) requirements. Facilities will also collect Source Water Baseline Biological Characterization Data to evaluate the condition of the biological community prior to operation of the new facility and prior to each permit renewal application. The level of effort needed for the study may vary considerably from one facility to another, depending on the availability of existing background information and the characteristics of the waterbody that the CWIS will be located in. For the purpose of developing the ICR cost and burden estimates, it is assumed that there is sufficient existing data for facilities to develop a baseline characterization of the contributing waterbody's biological community.

If a facility chooses Track I for meeting its permit obligations, the facility also needs to comply with flow reduction, velocity and technology requirements. Under the final rule, new facilities choosing Track I must provide information to the permitting authority demonstrating that they are in compliance with the flow reduction, velocity and technology requirements that are applicable to their CWISs. The facility hourly burdens for demonstrating compliance with these requirements include developing and submitting narrative descriptions, supporting documentation, and engineering calculations. Facility burden for Design and Construction Technology Plans is comparable to the burden for demonstrating compliance with one of the CWIS requirements.

Under Track II, the Comprehensive Demonstration Study evaluates the condition of the biological community prior to operation of the new facility and prior to each permit renewal application. The study entails plan development, a source water biological study, projections of anticipated impacts, and verification monitoring. As with the source water baseline biological characterization, the required effort level for the Track II source water biological study is likely to vary considerably depending on the availability of existing data and the complexity of the habitat that the CWIS will be located in.

For the purpose of developing the ICR cost and burden estimates, it is assumed that each Track II facility will perform sampling to develop the Source Water Biological Study for the Comprehensive Demonstration Study. The sampling required for the study is expected to take two years for facilities with intakes drawing from freshwater sources, and three years for facilities drawing from marine sources. Therefore, the entire application process can take up to three years to complete. EPA assumes that start-up activities and general information activities are accomplished during the first year of the permitting process. The Source Water Biological Study activities will be performed over the three years prior to the issuance of the NPDES permit to Track II facilities. The study to evaluate CWIS impacts will be conducted the year just prior to operation of the CWIS to allow the facility time to incorporate information from the Source Water Biological Study already underway. For those Track II facilities beginning operation during the first year of the ICR period, EPA assumes that they do not actually begin operating the CWIS until the end of the year, allowing them enough time to conduct the pilot study.

EPA anticipates that start-up, general information, and the Track I activities will be performed by facility staff. For those facilities taking Track II, EPA assumes that the sampling and statistical analyses will be conducted by contracted employees, although some of the taxonomic identification, enumeration, and characterization will be performed by a sub-contracted laboratory.

After both Track I and II facilities receive their NPDES permits and commence operations, they have annual monitoring and reporting requirements as well. Velocity monitoring and the inspection of installed technology will be carried out by facility staff. For impingement and entrainment monitoring, EPA assumes that the actual monitoring will be conducted by the contracted employees, while the facility manager and junior technical staff will spend some time reviewing the results in preparation for the yearly status report.

In the first year of permitted operation, Track II facilities are required to use impingement and entrainment monitoring data to perform a verification study, confirming that the CWIS technology is achieving impingement and entrainment rates commensurate to that obtained through closed-cycle recirculation technology. EPA assumes that each year approximately 25% of the Verification Studies will show that the facilities have not achieved the required impingement and entrainment level that they predicted in their Comprehensive Demonstration Studies. As a result, EPA assumes that these facilities will take measures to improve their impingement and entrainment rates and submit another Verification Study the following year.

EPA assumes that for Track I facilities, all of the activities performed during the initial permitting process would be repeated for the permit renewal. Track II facilities will need to

revise their Comprehensive Demonstration Study and repeat the Source Water Baseline Characterization Study. They do not have to perform another Evaluation of Cooling Water Intake Structure Effects or Verification Monitoring Plan. EPA anticipates that the level of effort required to repeat many of these tasks will be considerably less than what was initially required. Facilities will be able to rely on much of the information gathered during the first permitting process. As a result, the hourly burden estimates for activities are assumed to be 50% to 70 % less than those for the initial permitting process.

Table B-3 provides a summary of the hourly burden estimates for facilities performing the NPDES permit renewal activities associated with the rule. For a more detailed presentation of hourly burdens for facilities see Exhibit A.12 in Appendix A.

Director Burdens

Each Director's actual burden associated with reviewing submitted materials, writing permits, and tracking compliance will depend on the number of new in-scope facilities that will be built in the Director's State during the ICR period. EPA expects that State senior technical, junior technical, and clerical staff will devote time toward gathering, preparing, and submitting the various documents. EPA assumed burden estimates that reflect the staffing and expertise used by States for the NPDES permit administration process. In doing this, EPA considered the time and qualifications necessary to complete various tasks such as: reviewing submitted documents and supporting materials, verifying data sources, planning responses, determining specific permit requirements, writing the actual permit, conferring with facilities and the interested public, and entering the permit information into the ICIS databases. Table B-4 provides a summary of the hourly burden estimates for Directors performing various activities associated with the final rule. EPA assumes that the directors will spend a significant amount of time reviewing the Source Water Biological Characterization Data. The additional effort devoted to reviewing the study is due to the fact that the studies cover three years of data collected at the site. For a more detailed presentation of Director hourly burdens see Exhibits A.3 and A.13 in Appendix A.

B.2 Estimating Respondent Costs

This section describes the cost estimates for facilities and Directors, as well as the methods used to derive them.

B.2.1 Estimating Labor Costs

The costs to the respondent facilities associated with these time commitments can be estimated by multiplying the time spent in each labor category by an appropriately loaded hourly wage rate. All base wage rates used for facility labor categories were derived from the Bureau of Labor Statistics' (BLS) *Occupational Employment and Wages, 2013.*[3] These reported labor rates were based upon data from May 2013, and were adjusted for inflation to September 2014. Inflation factors ranging from 2.4% to 3.3%, depending on the labor category, were derived from the BLS Employment Cost Index[4] for adjusting the *Occupational Employment and Wages, 2013* labor rates to reflect labor rates as of September of 2014. Compensatory loading factors ranging from

[3] BLS Occupational Employment and Wages, 2013, http://www.bls.gov/news.release/pdf/ocwage.pdf
[4] BLS Employment Cost Index, http://www.bls.gov/web/echistrynaics.pdf - Tables 5 and 7

43% to 68%, depending on the labor category, were used to account for any paid leave, supplemental pay, insurance, retirement and savings, and required and non-required benefits received by employees.[5] EPA assumed an additional loading factor of 15% to account for general overhead costs directly attributable to facility employees performing work in support of the permit process. Expenses for contracted employees, typically include higher overhead costs, as well as fees to ensure profit for the contracting company. EPA assumes that the overhead for the contracted employees will be 50% and the fee will be 8%.

To represent the base labor rate for facility management, EPA used the median engineering manager category for management occupations of $61.62 per hour. After adjusting this rate for inflation, compensation, and overhead the rate is $109.80 per hour. The median wage of $25.19 per hour for an engineering technician was used to represent the base labor rate junior technical staff. After adjusting for inflation and other factors this labor rate was $44.90 per hour. The median annual salary for a drafter performing CAD work was reported to be $23.46 per hour, and after adjusting and loading the rate it is $41.80. The reported median wage for clerical workers was $14.45 per hour and the fully adjusted and loaded hourly rate is $26.70 per hour.

The base labor rate for a contracted manager for monitoring work conducted on-site is assumed to be for the median natural science manager in management occupations, with a fully loaded rate of $134.40 per hour. The median wage for a statistician was $38.12 per hour, with an adjusted hourly rate of $90.40 per hour. Biologists and biological technicians have an average hourly pay of $29.26 and $20.05, and a fully loaded rate of $69.40 and $47.60, respectively.

Director Labor Costs

To calculate the Director's costs, all of the base labor rates and compensation factors were derived from published employment cost trends for State and local government workers for the second quarter of 2013.[6] These labor rates were adjusted to reflect labor rates for September 2014.[7] EPA chose the BLS labor category of white-collar General Operations Manager to represent the senior administrative and technical staff that will oversee and manage the NPDES permit program. The base hourly rate for this category was approximately $42.14 per hour, and after adjusting for compensation and inflation it is $74.70 per hour. Similarly, EPA chose the BLS labor category of mechanical engineering technician to represent the junior technical staff that EPA expects to perform the majority of the actual NPDES permitting work. The reported base pay for this category was approximately $19.72 per hour, which becomes $34.70 per hour after being adjusted for compensation, overhead, and inflation. The hourly wage for State government clerical workers was $14.50 per hour before adjustment, and $28.90 afterward.

B.2.2 Estimating Capital and Operation and Maintenance Costs

Facility O&M Costs

A facility incurs capital/start-up costs when it purchases equipment or builds structures that are needed for compliance with the rule's reporting and record keeping requirements that the facility

[5] Compensation factors are from the BLS Employment Cost Trends Tables 4 and 9 as of September 2014. http://data.bls.gov/cgi-bin/print.pl/news.release/ecec.t04.htm and http://data.bls.gov/cgi-bin/print.pl/news.release/ecec.t10.htm

[6] May 2013 National Industry-Specific Occupational Employment and Wage Estimates, http://www.bls.gov/oes/current/naics3_999000.htm

[7] BLS Employment Cost Index, http://www.bls.gov/web/echistrynaics.pdf

will not use otherwise. EPA assumed that some facilities would incur capital/startup costs as a result of this rule.

A facility incurs operation and maintenance (O&M) costs when it uses services, materials, or supplies needed to comply with the rule's reporting and record keeping requirements that the facility will not use otherwise. Any cost for the operation and upkeep of capital equipment is considered O&M costs. Another type of O&M cost is for the purchase of contracted services such as laboratory analyses. The purchase of supplies such as filing cabinets and services such as photocopying or boat rental, are also considered O&M costs, and are referred to as ODCs.

EPA assumes that samples taken for the Source Water Baseline Biological Characterization Study will be analyzed by a contracted laboratory. The outside laboratories will perform taxonomic classification, data tabulation, and then deliver the data back to the facility. For the two to three years of monitoring required by the Source Water Baseline Biological Characterization Study, this service is estimated to cost $89,600 for facilities located adjacent to freshwater waterbodies and $174,800 for facilities drawing from either estuaries, oceans, or the Great Lakes.

For the evaluation of CWIS effects, EPA anticipates that facilities will perform pilot studies to determine the effectiveness of the technology they will be using to minimize impingement and entrainment. EPA assumes that the facility will be willing to spend approximately 10% of the anticipated costs of installing and operating the proposed technology. For costing purposes, EPA is assuming that a pilot study will be performed using a Gunderboom system. The range of costs for a floating Gunderboom system for a 150 MGD intake structure is $1.8 to $2.5 million in capital costs, and $150,000 to $300,000 in annual O&M costs (Phase I Technical Development Document). Using 10% of the high end of this range, and adjusting for inflation to September 2014, EPA estimates the Track II facility spends $303,000 to purchase and install a pilot Gunderboom system, and $34,500 to operate and maintain it for the study. Gunderboom technology was selected as an example technology that is potentially capable of meeting Track II requirements at a facility using a once-through cooling system. EPA assumes the pilot study impingement samples will be analyzed on-site by the biologists due to the difficulty of preserving impingement samples for shipment to an outside laboratory. Entrainment analysis of pilot study monitoring samples will be performed by an outside laboratory, at a cost of $6,900 for facilities drawing from freshwater, and $9,000 for facilities drawing from estuaries and the Great Lakes.

For visual inspections, EPA assumes that the Track I facilities will employ remote monitoring devices to monitor the equipment performance. The cost for the remote monitoring device includes $33,250 (Haught and Panguluri 1998) for purchase of equipment and $16,750 for installation and testing of equipment, for an adjusted total of $62,000.

For annual O&M costs, EPA assumes again that the analysis of impingement monitoring samples will be done on-site, while entrainment monitoring samples will be performed by an outside laboratory. Entrainment samples are estimated to cost $9,000 per year for freshwater facilities, and an estimated $11,700 per year for facilities drawing from estuaries or the Great Lakes.

In general, the labor costs and O&M costs reported in this analysis are assumed to represent typical average national cost estimates that are likely to be incurred by new facilities and by permitting authorities. EPA attempted to take into account various factors such as decreases in labor efficiency that occur during extreme climate conditions, equipment down time, and the occasional sample that might need to be replaced because it was lost or spoiled during transport. The Tables B-1 and B-2 provide a summary of both the estimated labor costs and ODCs per facility. For a more detailed presentation of all compliance costs for facilities see Exhibits A.1 and A.2 in Appendix A.

Table B-1. Burden and Costs per Facility for NPDES Permit Application Activities

Activities	Burden (hrs)	Labor Cost ($)	ODC ($)
Start-up Activities	43	$3,044	$55
General Information Activities	146	$7,744	$575
CWIS Flow Requirement	104	$4,752	$115
Source Water Baseline Biological Characterization	265	$16,163	$860
CWIS Velocity Requirement (Track I)	138	$7,706	$1,150
CWIS Flow Reduction Requirement (Track I)	108	$5,357	$460
Design and Construction Technology Plan (Track I)	108	$6,229	$55
Comprehensive Study Plan (Track II)	271	$17,446	$860
Source Water Biological Characterization-Freshwater (Track II)*	5,196	$326,127	$6,000
Source Water Biological Characterization-Estuary & Great Lake (Track II)*	9,368	$573,308	$14,900
Evaluation of Potential CWIS Effects - Freshwater (Track II)*	1,626	$113,215	$1,100
Evaluation of Potential CWIS Effects - Estuary & Great Lake (Track II)*	1,950	$132,120	$1,100
Verification Monitoring Plan	128	$8,433	$460
*This activity also has contracted service costs associated with it			

Table B-2. Burden and Costs per Facility for Annual Monitoring and Reporting Activities

Activities	Burden (hrs)	Labor Cost ($)	ODC ($)
Verification Monitoring- Freshwater (Track II)	92	$7,380	$575
Verification Monitoring- Estuary (Track II)	122	$9,849	$575
Initial Biological Monitoring (impingement) Freshwater	379	$24,802	$575
Reduced Biological Monitoring (impingement) Freshwater	191	12535.9	287.5
Initial Biological Monitoring (entrainment)Freshwater*	482	$31,520	$745
Reduced Biological Monitoring (entrainment)Freshwater*	244	$16,035	$373
Initial Biological Monitoring (impingement) Estuary	614	$40,766	$1,150
Reduced Biological Monitoring (impingement) Estuary	308	$20,473	$575
Initial Biological Monitoring (entrainment) Estuary*	776	$50,903	$1,320
Reduced Biological Monitoring (entrainment) Estuary*	392	$25,749	$660
Velocity Monitoring	163	$7,627	$115
Visual Inspection of CWIS Technology	253	$13,076	$115
Yearly Status Report Activities	348	$25,563	$860
*This activity also has contracted service costs associated with it.			

Table B-3. Burden and Costs per Facility for NPDES Permit Renewal Activities

Activities	Burden (hrs)	Labor Cost ($)	ODC ($)
Start-up Activities	13	$973	$55
General Information Activities	72	$4,087	$575
CWIS Flow Requirement	31	$1,394	$115
Source Water Baseline Biological Characterization	79	$4,894	$860
CWIS Velocity Requirement (Track I)	75	$4,123	$1,150
CWIS Flow Reduction Requirement (Track I)	108	$5,357	$460
Design and Construction Technology Plan (Track I)	43	$2,464	$55
Comprehensive Study Plan (Track II)	80	$5,088	$860
Source Water Biological Characterization - Freshwater (Track II)*	2,808	$171,092	$3,600
Source Water Biological Characterization - Estuary & Great Lake (Track II)*	5,268	$315,934	$9,000
*This activity also has contracted service costs associated with it.			

Director O&M Costs

EPA does not anticipate any operation and maintenance costs for Directors under this rule. Table B-4 provides estimates of Director ODCs and labor costs. For a more detailed explanation of Director costs see Exhibit A.3.

Table B-4. Estimating Director Burden and Costs for Activities

Activities	Burden (hrs)	Labor Cost ($)	ODC ($)
Director Permit Issuance Activities for Track I Facility	188	$9,866	$345
Director Permit Issuance Activities for Track II Facility	646	$41,679	$345
Verification Study Review (per Facility)	21	$963	$55
Annual Director Activities (per Facility)	50	$2,329	$55
Director Repermitting Activities for Track I Facility	55	$2,960	$345
Director Repermitting Activities for Track II Facility	143	$8,991	$345

Appendix B – References

Haught, R., and S. Panguluri, 1998. Selection and management of remote telemetry systems for monitoring and operation of small drinking water treatment plants. In proceedings of the First International Symposium on Safe Drinking Water in Small Systems, Washington, DC.

Appendix C – Copy of Regulations Authorizing Data Collection and Federal Register Notice

C.1 Authorizing Regulations

(See attached PDF document)

C.2 Federal Register Notice

(See attached PDF document)