



**INVITATION TO BID NO. 2020-96
SURFACE WATER PLANT FILTER MEDIA REPLACEMENT**

Sealed bids will be received in the office of Purchasing and Contracting in the City Center, 324 W. Evans Street Florence, South Carolina, 29501 until **December 31, 2020 at 2:00 pm** from qualified vendors to replace one (1) Filter Media at the surface Water Plant located at 2598 Florence Harlee Blvd. Florence, SC 29506.

Bids shall be opened promptly at the above stated time and date and their contents will be made public for the information of the bidder and other interested parties. The bid will not be awarded until the Purchasing Agent and the applicable Department Director have had ample time to review each bid.

Bids must be submitted in a sealed envelope with “Bid No. 2020-96 Filter Media Replacement” clearly marked on the outside of the envelope for easy identification by the City of Florence. Any bids received later than the specified time will not be accepted/considered. The City does not accept email and/or electronic bids. The city will not be responsible for late submission caused by the postal service, other carriers, or any other delivery problems regardless of the reason. Bids submitted by mail, Federal Express, United Parcel Service, etc. must meet these same requirements and should be addressed to:

**City of Florence
City Center
324 W. Evans Street
Florence, SC 29501-3430**

The City of Florence under Title VI of the Civil Rights Act of 1964 and related statutes ensures that no person shall on the grounds of race, color, national origin, sex, disability, and age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

La ciudad de Florencia en el Título VI de la Ley de Derechos Civiles de 1964 y los estatutos, se asegura de que ninguna persona por motivos de raza, color, origen nacional, sexo, discapacidad, edad, ser excluido de participar en, ser negado los beneficios de, o ser de otra manera sujeto a discriminación bajo cualquier programa o actividad que administra.

The City of Florence reserves the right to engage in discussions with any or all responsible bidders who submit bids which appear to be eligible for award, for the purpose of clarification to assure full understanding of and responsiveness to the Invitation to bid requirements herein.

This solicitation does not commit the City of Florence to award a contract/purchase order, to pay any costs incurred in the preparation of a bid, or to procure or contract for services. The City of Florence reserves the right to reject any and all responses, to cancel this solicitation, and to make an award deemed in its own best interest.

Lynwood F. Givens
Purchasing Agent

MINORITY AND WOMAN OWNED BUSINESS

Minority Business Owners (minority or woman owned businesses) will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, creed, sex or national origin in consideration for an award. It is the policy of the City that minority business and women owned business enterprises (MBE/WBE) have an opportunity to participate at all levels of contracting in the performance of City contracts to the extent practical and consistent with the efficient performance of the contract.

The successful firm must ensure that all subcontractors, agents, personnel assigned by or employees of prime firm and subcontractors are not discriminated against because of their race, color, religion, sex or national origin. Bidders must make positive efforts to provide equal employment opportunity for minority and women owned businesses.

LOCAL AND MINORITY BUSINESS ENTERPRISE PURCHASING PROGRAM:

When lowest bid is the principal determining factor in a bid selection process it is the intent of the City of Florence to provide preference first to local businesses within the City or County of Florence; however, if no local business is eligible or able to participate, preference shall then be provided by the City to minority business enterprises based on the following guidelines:

- a. For purposes of this policy, a "local business" is defined as a person, firm, contractor, corporation, or other business entity offering the services and/or products being bid by the City that maintain a place of business and have a physical business address located and operating within the City or County of Florence. The business must have been established for not less than one year within the City or County of Florence and have a valid City of Florence Business License for a minimum of 12 months prior to the bid date.
- b. For purposes of this policy, a minority business enterprise (MBE) is defined as an MBE that is certified in accordance with South Carolina Regulations § 19-445.2160, as authorized by §11-35-5270 the South Carolina Code of Laws, as amended.
- c. When lowest bid is the principal determining factor in the selection process any "local business" as defined in Subsection A above that submits a responsible and responsive bid within 5% (if the business is located within the City of Florence) or 3% (if the business is located within Florence County) of the non-local bidder who submitted the lowest bid may match the bid submitted by the non-local bidder. A "local business" that is within the percentage guidelines of the lowest bid received shall then be eligible for award of the contract.
- d. If the lowest bid is not a "local business" and a "local business" is within the percentage guidelines of the lowest bid received, the "local business", subject to the provision of Subsection H below, shall be awarded the contract if it is willing to provide goods or services at the same price of the lowest bid received.
- e. If conditions of Subsections C above are met and the qualified "local business" declines or is unable to match the lowest bid, then the option to do so moves to the next qualified "local business", if such business' bid is within the percentage guideline of the lowest bid, and is similarly responsible and responsive.

- f. In the event there is no “local business” eligible or willing to match the lowest bid, the lowest responsible and responsive bid submitted by an MBE, if any, would be allowed the opportunity to match the bid submitted by the non-local bidder and thereby be awarded the contract when lowest bid is the primary determining factor in the bid selection process.
- g. If procurement is to be made pursuant to state funding requirements, federal funding requirements, bond covenants, or other outside funding source requirements which prohibit or restrict local or MBE preference, then no local or MBE preference consideration will be given.
- h. The provisions for a local or MBE preference does not prohibit the right of the City to compare quality of materials proposed for purchase and compare qualifications, character, responsibility and fitness of all persons, firms, contractors, corporations, or other business entities submitting bids. Accordingly, the local or MBE preference for a particular procurement may be waived by the City Manager upon written recommendation and justification by the Department Director.

INSTRUCTION TO BIDDERS

The successful bidder must be authorized to sell the stated product or perform the services outlined in the specifications of this bid document.

All bids must be signed by an authorized officer or agent of the company submitting the bid.

The City will assume no responsibility for oral instructions or suggestions. All official correspondence in regard to the specifications should be directed to and will be issued by the City Purchasing Agent.

DEFINITIONS: Responsible Bidder means a bidder who has the capability in all respects to fully perform the stated requirements, and the integrity and reliability which will assure good faith performance.

Responsive Bidder means a bidder who has submitted a bid which conforms in all material respects to the Invitation to Bid.

PROTEST: Any actual or prospective vendor, bidder, or contractor who is aggrieved in connection with the solicitation or award of a contract may formally protest to the Assistant City Manager. The protest shall be submitted in writing within seven (7) days after such aggrieved person or party has received the bid tabulation or the intent to award letter.

DISPUTES: In cases of disputes as to whether or not an item or service quoted or delivered meets the specifications, the decision of the City of Florence shall be final and binding on all parties. The Purchasing Agent may request in writing, the recommendation of the head of the City agency using the item or other objective sources.

DEVIATIONS: Any deviations from the specifications contained herein must be noted in detail on the bidder’s bid response for the City of Florence’s consideration. Failure to submit documentation of deviations shall be grounds for rejection of the item offered to the City of Florence.

CHANGES: Any changes in this Invitation to Bid after the purchase order/contract agreement has been awarded must be with the written consent of the Purchasing Agent or the City Manager;

otherwise, the responsibility for such changes lies with the vendor.

INQUIRIES: Questions concerning this invitation to bid should be directed to the City Purchasing Agent, Lynwood F. Givens in writing by e-mail at lgivens@cityofflorence.com. The deadline for the submission of all inquiries is **December 17, 2020 at 5:00 pm**. **Any changes to the specifications in the bid package shall be in writing in an addendum. All Addendums will be posted on the City of Florence website at www.cityofflorence.com. It will be the responsibility of bidders to periodically check the website for addendums.**

OWNERSHIP OF MATERIAL: Ownership of all data, material and documentation originated and prepared for the City of Florence pursuant to this contract/purchase order shall belong exclusively to the City of Florence.

A complete copy of the City of Florence purchasing policies and procedures manual can be downloaded from the City of Florence website at www.cityofflorence.com

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required to remove existing granular activated carbon and sand filter media and replace with new granular activated carbon and sand filter media for filter. Filter is 16.25 ft by 22.0 ft and is to have 4 ft deep new GAC over 1.0 ft deep sand over 0.25 ft deep torpedo sand plus extra media for stock and skimming for all media as defined herein.

1.02 RELATED WORK

- A. None

1.03 SUBMITTALS

- A. Proper operation of the filters requires very careful selection of relative sizes of the various media. Before purchasing the media, submit to the Engineer for approval two 5-lb samples of each lot of each material to be furnished. The lot number shall be marked on each individual bag and sample, along with the date of sample. After submission of samples it may be found desirable to revise slightly the gradation of the media. Such revisions shall be made only on written approval by the Engineer.
- B. No material shall be shipped to the site of the work until such material is approved by the Engineer in writing.
- C. Testing and Shop Drawings:
 - 1. Provide the services of a qualified testing laboratory experienced in testing filter media materials to perform the tests specified.
 - 2. Testing laboratory shall be approved by the Engineer/Owner.
 - 3. The costs for testing shall be included. Owner may perform additional testing, at Owner's expense and Contractor shall permit and assist sampling as required.

- a. The following tests are to be reported:
 - 1) Grain Size Distribution Analysis.
 - 2) Acid Solubility.
 - 3) Average Apparent Specific Gravity.
 - 4) Effective Size and Uniformity Coefficient.
 - 5) Hardness (Mho Scale).
 - b. The following tests are to be reported for GAC
 - 1) Particle Size Distribution
 - 2) Effective Size
 - 3) Uniformity Coefficient
 - 4) Apparent Density
 - 5) Ash
 - 6) Iodine Number:
4. Shop Drawings
- a. Filter Media data sheets indicating material, unit weight, effective size, uniformity coefficient and other pertinent data specified or required to evaluate quality for each layer of material.
 - b. Complete installation and placement procedures.
 - c. An Affidavit of Compliance in accordance with AWWA B100, NSF No. 61 and AWWA B604 for activated carbon.
 - d. Test Results performed by the independent testing laboratory.
 - e. Evidence of Manufacturing Experience (5 years minimum with 10 installations in satisfactory operation).
 - f. Certification of Quality Control Program.

D. Quality Control

- 1. Pre-Shipment Tests:
 - a. Sampling and testing to be performed in accordance with AWWA B100 for sand and anthracite and AWWA B604 for GAC, prior to shipment of materials.
 - b. Perform test on samples collected by manufacturer and sent to approved testing laboratory in accordance with AWWA B100 and B604.
 - c. Provide certified copies of all tests performed by laboratory.
- 2. Receipt Tests:

- a. Sampling and testing to be performed in accordance with AWWA B100 and B604 for GAC, on material delivered to the site.
- b. Perform tests on samples obtained directly by the approved testing laboratory in accordance with AWWA B100 and B604 for GAC.
- c. If the results of the Receipt Tests do not comply with the specifications, the materials must be replaced to comply with specifications. For GAC, consideration will be given for samples not meeting specifications on sizing parameters which can be affected by sampling procedure and settling during transit in build container.

1.04 REFERENCE STANDARDS

- A. American Water Works Association (AWWA)
 - 1. AWWA B100 - Filtering Materials
 - 2. AWWA B300 - Hypochlorites
 - 3. AWWA B604 - Granular Activated Carbon
- B. National Science Foundation (NSF)
 - 1. NSF Standard No. 61 - Indirect Additives, Process Media
- C. American Society for Testing and Materials (ASTM)
 - 1. ASTM E11 - Standard Specification for Wire-Cloth Sieves for Testing Purposes.
- D. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 EXTRA STOCK

- A. Furnish 5 percent extra for each media component (sand, anthracite, and granular activated carbon) furnished beyond the amount shown on the Drawings for Owners inventory media. Provide additional media to allow for 1-inch scraping of each media component for skimming and backwash losses. Inventory media shall be supplied in waterproof bags (100 lbs maximum size) which are stamped with the media type and size. Inventory media shall be stacked neatly for storage where directed by the Engineer.

PART 2: PRODUCTS

2.01 MATERIALS

- A. The sand shall be well graded, washed silica sand completely free from mica, dust, dirt and foreign substances of any kind and shall have a specific gravity of at least 2.65. The sand shall have an effective size of 0.45 to 0.55 mm, a maximum uniformity coefficient of 1.5 and a minimum uniformity coefficient of 1.3. The sand shall have an acid solubility less than 5 percent. Torpedo sand shall have an effective size of 1.0 ± 0.1 mm, a maximum uniform coefficient of 1.5 and a minimum uniform coefficient of 1.3, and a

specific gravity of at least 2.65.

B. Sand and torpedo sand meeting the above requirements may be purchased from Jesse S. Morie & Son, Inc., Mauricetown, NJ; Roberts Filter Manufacturing Company, Darby, PA; Unifilt Corporation, Zelienople, PA; Wedron Silica Company, Wedron, IL; Best Sand, Chardon, OH; or equal.

C. Granular activated carbon shall be Filtrasorb 820 as manufactured by Calgon Corporation; or equal as manufactured by the Carborundum Company or Hydrodarco GCW as manufactured by American Norit Company. The carbon shall be capable of removing turbidity, color, tastes, odors and other organic contamination from water previously pretreated by conventional water treatment processes. The carbon shall be made from selected grades of bituminous coal capable of withstanding repeated back wash procedures without significant change in physical sizes and shall be suitable for terminal reactivation and re-use. Data showing successful application of the carbon in municipal water plants including turbidity and organic contamination removal shall be submitted.

1. The bituminous coal base granular activated carbon shall have the following physical properties:

a. Mesh Size, U.S. Sieve Series	8 by 20
b. Percent by weight Passing No. 8 Sieve	95 to 100
c. Percent by weight Passing No. 20 Sieve	0 to 4
d. Effective Size, mm	1.0-1.2
e. Uniformity Coefficient	1.5 max., 1.3 min.
f. Apparent Density, Backwashed and Drained, g/cu cm	0.50-0.60 g/cc (31.2 - 37.5 lbs/cf)
g. Ash, Maximum Percent	10
h. Total Surface Area, N2BET Method Sq m/g	950 to 1050
i. Pore Volume, cu cm/g, Minimum	0.80
j. Iodine Number, Minimum	900
k. Abrasion Number, Minimum (ASTM)	75 minimum
l. Moisture, weight % maximum	2.0
m. Backwashed and Drained Density	0.425 – 0.51 G/CC (26.5 – 31.9 lbs.cf)
n. Trace Capacity Number (TCN)	9 mg/cc, min

2. All activated carbon shall be from coal mined in North America, manufactured into activated carbon in the United States and sold directly to the Contractor by the manufacturer, who shall be a corporation with headquarters in the United States.
- F. All of the above filtering materials shall comply with the most recent editions of the standards of NSF No. 61 and AWWA B100. GAC shall also comply with AWWA B604.

PART 3: EXECUTION

3.01 INSTALLATION

- A. Torpedo sand, sand and anthracite shall be transported, delivered and placed in a careful manner to exclude all dust, dirt, or deleterious material and to prevent physical damage to the particles.
- B. After delivery to the site, but before placing the media, the Engineer may take random test samples of each media and have a sieve analysis performed on the samples by a laboratory selected by the Engineer. Failure of the samples to meet the above Specifications shall be cause for rejection and the Contractor shall remove such media from the site and provide media meeting these Specifications. No plus tolerance will be allowed on any uniformity coefficients. The media supplier shall provide suitable shipment and/or make allowance for any degradation or segregation during shipping, so the delivered material meets these specifications for effective size and uniformity coefficient.
- C. Each filter box shall be thoroughly cleaned by brooming and vacuuming before any media is placed and shall be kept clean throughout the placement operation. **No media or sand shall be placed until the under drain has been thoroughly inspected by city staff. (If any repairs need to be done to under drain, the project will be put on hold until repairs are made.)**
- D. The media system shall be installed in accordance with the filter bottom manufacturer's specific detailed instructions (see O&M manual for existing underdrains). The bottom layer shall be placed carefully by hand to avoid damage to the underdrain system and to ensure a free passage of water and air from the nozzle slots. Workmen shall not stand or walk directly upon the torpedo sand, but upon boards or staging, so the weight of the workmen will not displace the torpedo sand. Any torpedo sand which becomes mixed shall be removed and replaced.
- E. The correct thickness of each layer shall be obtained as follows:

Before the bottom layer is placed, the top of each layer shall be marked on the side of the filter. The top of each layer shall then be leveled against a water surface held at the appropriate mark. None of the particles shall be less than half submerged, and there shall be no places where additional torpedo sand can be placed without the particles extending more than 1/2 of their volume above the water surface.
- F. After each layer of media has been placed, it shall be repeatedly backwashed until all dust and dirt has been washed out, as evidenced by no backwash water discoloration.
- G. After the sand has been placed, the bed shall be backwashed continuously for a total period of at least 30 minutes in order to stratify the bed and to wash out dirt. This will require several separate backwashes at an expansion of not less than 30 percent

followed by a slow closing of the wash water valve. Adequate cleansing shall be evidenced by the absence of backwash water discoloration and turbidity below 0.5 NTU. Water shall be added to the filter very gradually, particularly with new media, as the air trapped in the underdrain and torpedo sand can be very disruptive to the media. Contractor is responsible for replacing any media lost during testing and start-up beyond the skimming allowance (top 1-inch).

- H. Following this backwash, the top 1-in of sand shall be removed and discarded, the surface leveled, and the activated carbon placed. The media shall be similarly backwashed, leveled and the top 1-inch skimmed before the filter is placed in service. The depth of media, as shown on the Drawings and as specified herein, shall be measured in place after backwashing and filtering for one hour.

3.02 DISINFECTION

- A. After placement of the filter torpedo sand and sand the entire depth of filter media and underdrain system in each filter shall be disinfected. The activated carbon would adsorb the chlorine, interfering with the disinfection of the filter, therefore granular activated carbon shall be placed after disinfection using disinfected equipment, i.e., boots etc. and then disinfected with caustic per GAC manufacturers recommendations subject to Engineers review. GAC manufacturer shall demonstrate in shop drawing their recommended disinfection process is effective for coliform and other microorganisms. Only products approved for disinfection of potable water shall be used. Filter disinfection shall be in accordance with AWWA B300 except as modified in the following procedure:
 - 1. With all other filter valves closed, the filter shall be filled with water from the backwash system while simultaneously adding sufficient disinfectant (chlorine solution or sodium hypochlorite) to the incoming water to produce a concentration of 50 mg/l of free chlorine in the filter box.
 - 2. The backwash valve shall then be closed, and the disinfectant allowed to remain in the filter box. The water level shall be maintained at the maximum water level of the filter for not less than twenty-four hours. The free chlorine residual shall be verified to be at least 25 mg/l in the filter after 24 hours, or the filter shall be backwashed, and the disinfection procedure shall be repeated. The backwash water shall be disposed of in accordance with applicable regulations.
 - 3. Upon completion of disinfection, the filter contents shall be backwashed to waste for at least 30 minutes after which the filter shall be filled with pretreated water and put into normal service. Backwash water shall be disposed of in accordance with applicable regulations.

Alternate Bid:

- 1. Replace two (2) Filter Media

CRITERIA FOR AWARD

Firms are requested to submit two (2) copies of the bid on the City of Florence Bid sheet included in this invitation to bid. The bid will be awarded to the lowest responsible/responsive bidder that best meets the City of Florence's specification/scope of work, taking into consideration but not limited to the following:

1. Price
2. Experience of the Company
3. Quality of Service
4. Timeliness of completion of work

The City shall have sole discretion in evaluating bids. The City reserves the right to select the bid that it may determine to be in the best interest of the City. The City also reserves the right to reject any and all bids, including that of the selected Contractor if satisfactory contract negotiations cannot be concluded.

Bid tabulations will be sent to all bidders via email and posted on the City of Florence website at www.cityofflorence.com.

Before the award of contract/purchase order, any respondent may be required to show that they have the necessary license, facilities, experience, ability, and financial resources to perform the work in a satisfactory manner. Respondents may be required to furnish the City with sworn statements as to their experience. No contract/purchase order will be awarded except to responsible offerors capable of performing the class and type of work required.

TAXES

The City of Florence pays SC Sales Taxes in the amount of 8%. However, the City of Florence is exempt from Federal Excise Taxes and will issue exemption certificates, if requested. **INCLUDE ALL APPLICABLE TAXES IN YOUR PROPOSAL COSTS.**

BID BOND

A bid deposit in the amount of at least 5% of the proposed contract price will be required of all bidders. This deposit will be in the form of a 5% bid bond executed by a corporate surety licensed under the laws of South Carolina. If the successful bidder fails to enter into the proposed contract within 15 days after the award date, the City may call for the bid bond.

PERFORMANCE/PAYMENT BONDS

A performance and payment bond, each in the amount of 100% of the final contract price of the construction portion of this project will be required of the successful firm. The successful firm will be required to furnish the required performance and payment bonds within ten (10) business days after written notice of formal award of contract. Work will be required to commence within ten (10) days of written notice to proceed by the Purchasing Agent.

SUB-CONTRACTORS LIST

A sub-contractors list is required for all work that is to be done inside the City. The list is to be sent to Lynwood F. Givens, Purchasing Agent at the Office of Purchasing and Contracting, located in the City Center at 324 W. Evans St., Florence, S.C. Please note if any sub-contractors are minority or women-owned businesses.

SC ILLEGAL IMMIGRATION REFORM ACT

By signing this offer, you certify that your company will comply with, and will remain in compliance with during the term of the agreement, the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agree to provide to the City of Florence upon request any documentation required to establish either:

- (a) That Title 8, Chapter 14 is inapplicable to your company or your subcontractors or sub-subcontractors; or
- (b) That your company and your subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14.

Pursuant to Section 8-14-60, your company shall agree to include in any contracts with your subcontractor's language requiring your subcontractors to:

- (a) Comply with the applicable requirement of Title 8, Chapter 14, and
- (b) Include in their contracts with the sub-subcontractor's language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14.

REQUIRED INSURANCE INFORMATION

The firm shall agree to hold harmless, indemnify and defend the City of Florence, South Carolina, its agents and employees from any claims for property damage or personal injury (including death resulting therefrom). Such claims include, but are not limited to, actual, consequential, incidental or punitive damages. The firm shall agree to maintain sufficient comprehensive general liability insurance, naming the City of Florence, South Carolina, as additional insured, in the amounts of \$1,000,000.00 per occurrence and \$1,000,000.00 per person. Proof of such insurance shall be

given to the Purchasing Agent by an appropriate certificate-of-insurance issued by the firm's insurance agent.

Further, the firm shall agree to insure prior to commencement of work on the project (job), all subcontractors, agents, assigns or employees of prime firm and subcontractor shall agree to hold harmless, indemnify and defend the City of Florence, South Carolina, its agents and employees from any claims for property damage or personal injury (including death resulting therefrom). Such claims include but are not limited to, actual, consequential, incidental or punitive damages. Further, prior to commencement of work on the project (job), the firm shall insure that all subcontractors, agents or assigns of the firm, maintain sufficient comprehensive general liability insurance, naming the City of Florence, South Carolina, as additional insured, in the amounts of \$1,000,000.00 per occurrence and \$1,000,000.00 per person. Proof of such insurance shall be given to the Purchasing Agent by an appropriate certificate-of-insurance issued by applicable entity's insurance agent.

With regards to comprehensive general liability insurance, claims may be made during or after the term or terms of the contract/purchase order agreement.

Vehicle liability insurance with minimum combined single limits of \$1,000,000.00 per occurrence shall be maintained by the firm.

The successful firm shall take out and maintain, during the life of the contract agreement, workers' compensation and employer's liability insurance for all employees to be engaged in services on this project under this agreement in an amount not less than \$1,000,000.00, and in case any such services are sublet, the firm shall require all subcontractor(s) also to provide workers' compensation and employer's liability insurance in an amount not less than \$1,000,000.00 for all of the subcontractor's employees to be engaged in such.



INVITATION TO BID NO. 2020-96
SURFACE WATER PLANT FILTER MEDIA REPLACEMENT

Total cost (including tax) including materials, equipment, fuel, labor, supervision, and all other resources necessary to complete the project as described in the Invitation to bid.

TOTAL BID: \$ _____
One Filter Media

ALTERNATE BID: \$ _____
Two Filter Media

Authorized Signature	Printed Name	Date
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Company Name

Federal Tax ID.	E-mail Address
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Mailing Address (Include Zip Code)

Telephone Number	Fax Number
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