RESOLUTION NO. 1089

A RESOLUTION APPROVING THE BID PROCESS; ACCEPTING THE LOW QUALIFIED BIDDER; VERIFYING PROJECT FUNDING; AND AUTHORIZING CONSTRUCTION OF THE WASTEWATER TREATMENT PLANT RBC BLOWER PROJECT.

WHEREAS, the City of Wilsonville employed Ch2M Hill to prepare a Wastewater Treatment Plant Secondary Treatment Capacity Evaluation Report in July 1993; and

WHEREAS, the Evaluation Report recommended short and long-term improvements at the Wilsonville Wastewater Treatment Plan; and

WHEREAS, the proposed short-term improvements to maximize the treatment capacity of the existing system included adding a third blower to increase dissolved oxygen in the RBC process and increase the rotation speed of the air-driven RBC media; and

WHEREAS, the City duly advertised for competitive bids to deliver and install one centrifugal blower, and

WHEREAS, sealed bids were received prior to 2:00 p.m. November 19, 1993 at the Public Works Department Offices, 8455 SW. Elligsen Road, Wilsonville, Oregon, 97070; and

WHEREAS, bids were opened individually and separately read aloud after 2:00 p.m. on November 19, 1993; and

WHEREAS, the summary of bids and staff report are marked as "Exhibit A," attached hereto and incorporated herein; and

WHEREAS, the Public Works Director has reviewed the bids and recommends that the contract be awarded to Triad Mechanical, Inc., the lowest qualified bidder; and

WHEREAS, the City of Wilsonville desires to execute a construction contract agreement in a timely manner; and

NOW, THEREFORE, THE CITY OF WILSONVILLE RESOLVES AS FOLLOWS:

1. The City Council, as Contract Review Board, finds and concludes all bids were duly advertised, received, publicly opened and approved as being completed for consideration for award according to the provisions of Oregon Revised Statutes, Chapter

279, Public Bids and Contracting and Wilsonville Code, 2.314, Contracts with the City, and the Attorney General's Model Rules which the City has adopted as its contracting rules.

2. The Public Works Director is authorized to award the Wastewater Treatment Plant RBC Blower Project construction contract to Triad Mechanical, Inc., the lowest qualified bidder, in the total project bid amount of $26,467.00.

3. The total expenditure of funds for the RBC Blower Project is authorized in the following manner:

Fund: #3020 - Sewer Operating Fund
Line Item No. 3020-1-7131005
FY 93-94 Adopted Budget Amount: $59,400

ADOPTED by the City Council of the City of Wilsonville at a regular meeting thereof the 7th day of March, 1994, and filed with the Wilsonville City Recorder this date.

GERALD A. KRUMMEL, Mayor

ATTEST:

VERA A. ROJAS, CMC/AAE, City Recorder

SUMMARY of Votes:

Mayor Krummel	AYE
Councilor Benson	AYE
Councilor Hawkins	AYE
Councilor Lehan	AYE
Councilor Sempert	AYE

EXHIBIT "A"

WASTEWATER TREATMENT PLANT
RBC BLOWER PROJECT

STEVE STARNER
PUBLIC WORKS DIRECTOR

Abstract: A Rotating Biological Contractor (RBC) is a fixed-film biological treatment system designed to remove organic contamination from the wastewater stream. The RBCs are driven by the buoyant force of air rising from diffusers in the bottom of the basin. The air is supplied by centrifugal blowers. CH2M Hill, the RBC design engineer, has recommended that an additional blower be installed at the Wilsonville Treatment Plant. Triad Mechanical has submitted a bid for $26,467.00 to deliver and install the RBC blower. This project is budgeted in the FY 93-94 Sewer Operating Fund.

Recommendation: Authorize staff to proceed with the RBC Blower Project by adopting Resolution No. CB-R-777-94.

Introduction: The Wilsonville Treatment Plant was modified from an activated sludge treatment process to a RBC treatment process during a plant expansion engineered by Ch2M Hill in 1980-1981. Although operating at only 50 per cent of design capacity, the RBC treatment process began exhibiting symptoms of overloaded conditions in 1989. By contract dated January 20, 1993, Wilsonville hired Ch2M Hill to reassess the capacity of its Wastewater Treatment Plant and make recommendations for improving the performance of the RBC treatment system.

By report dated July 1993, Ch2M Hill recommended that the following short-term improvements be carried out to maximize the capacity of the existing system:

1. Add a third blower to increase DO in the RBC process and rotation speed of the RBC media.

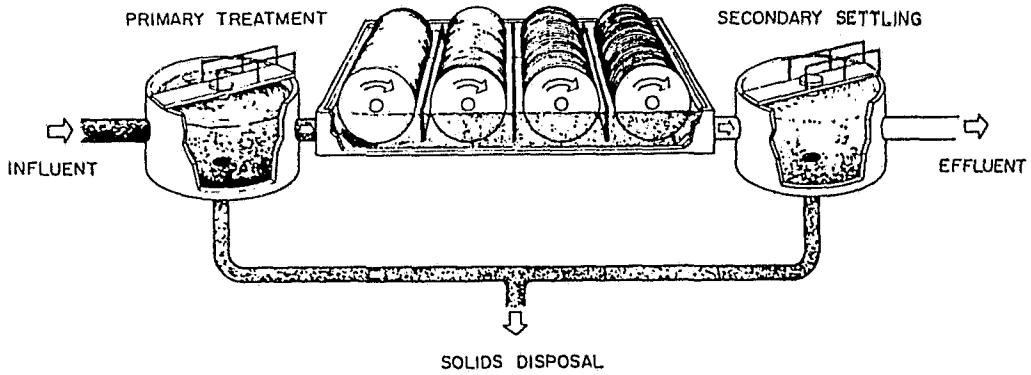
2. Recycle RBC effluent to mix with primary effluent upstream of the RBC system to decrease RBC influent concentration.

3. Provide the capability for series operation of the RBC.

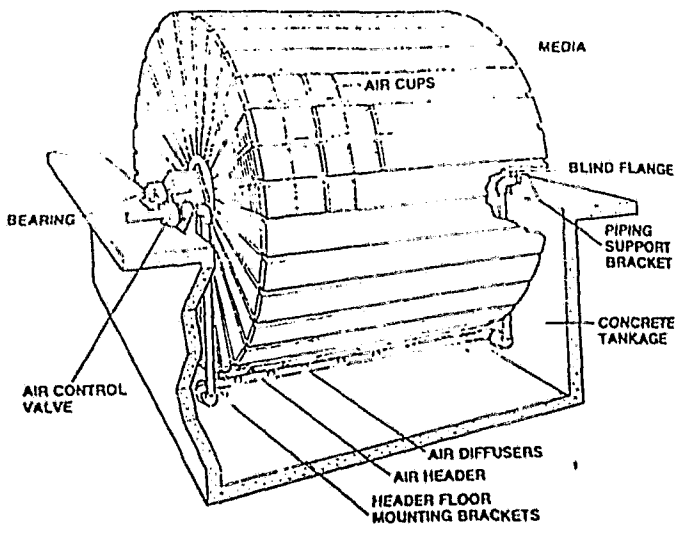
4. Provide solids return capability to the second RBC train in series to obtain solids contact time.

The engineer's estimate for the cost of the improvements outlined above is $364,00.00. To date, plant staff have completed item no. 2, RBC effluent recycle, for a cost of $5,258.06. Upon further review by Ch2M Hill, the Community Development Director, the City Engineer and the Wastewater Supervisor, it has been determined that it would be more prudent to pursue the construction of a treatment plant upgrade than to invest more capital into recommended items no. 3 and 4 (described above). However, item no. 1, the RBC Blower project, will provide immediate treatment benefit by increasing the rotational speed of the RBC media, increasing the contact time between microorganisms and the wastewater and increasing the dissolved oxygen content of the wastewater. Given that the time frame for completion of construction for a treatment plant upgrade is approximately December 1996, the RBC Blower Project becomes essential to maintaining DEQ discharge permit parameters in the interim.

Background: The RBCs provide biological (secondary) treatment for a settled wastewater from primary clarifiers. A thin culture of aerobic bacteria grows on the surfaces of corrugated plastic media discs as wastewater passes through the tank in which the discs are little less than half submerged. These bacteria are alternately immersed in the wastewater and then exposed to air as the discs rotate. They consume largely the soluble BOD as food that remains in the primary effluent. The discs support enough bacteria, and the detention time within the tank is sized, to oxidize design BOD loadings. As the bacteria feed, grow, and multiply, clumps of them slough off. Primary effluent solids that were too small to settle in the primary clarifier combine with these clumps and are settled with them in the secondary clarifier.



The discs are fabricated from sheets of polyethylene and are thermally bonded and assembled onto horizontal shafts 25 feet long. The sheets are spaced to provide for the distribution of wastewater and air. The discs are driven by the buoyant force of air rising from diffusers in the bottom of the tank. The air rises through air cups on the periphery of the discs, giving them rotational torque. Some of the air bypasses the cups and continues through the media aiding in the sloughing of biomass. In this way, air aids in the treatment process, but its prime purpose is to rotate the discs.



Two centrifugal blowers of 1,900 cubic feet per minute air flow at 3.4 psi are housed in a blower building east of the RBC basins. They were originally designed to allow one blower to operate the 10 RBC shafts, which then provides 100 percent standby capability. However, due to current loading conditions, operators are required to operate both blowers continuously in order to achieve minimal disc rotation speed. By adding a third blower, operators will have the ability to match the rotational speeds of the discs to the BOD loadings and will be provided with air supply standby capability.

Process: On November 8 and November 10, 1993 the City of Wilsonville advertised a Request for Proposals for the RBC Blower Project in the Daily Journal of Commerce. On November 10, 1993 the City also advertised for proposals in the Canby Herald and Wilsonville Spokesman.

Sealed, written proposals were opened nine days after the date of the last publication of the advertisement (ORS 279.025 only requires five days). The results of the bid opening may be summarized as follows:

1.	Spencer Turbine Company. Windsor, Connecticut:	$18,221.00
2.	Triad Mechanical, Inc. Portland, Oregon:	$26,467.00

By letter dated November 19, 1993, Spencer Turbine Co. withdrew their bid as the price quoted was for delivery, only. The request for proposals clearly stated "delivery and installation".

Conclusion: Triad Mechanical is currently under contract with the City of Wilsonville for the Wastewater Treatment Plant Headworks Improvement Project. Their performance on the headworks construction is meeting expectations and the project expenses are 20 per cent below the budgeted allocation. Given that the factory delivery price of the RBC blower is approximately $18,500, Triad Mechanical has allowed approximately $8,467.00 for labor, materials and profit. Triad Mechanical is prequalified, and a local Portland mechanical contractor with substantial experience and history.

The City Council is recommended to award the RBC Blower Project to Triad Mechanical in the amount of $26,467.00. For project budgeting purposes, the City Council is recommended to authorize a total project expenditure in the amount of $30,500.00, providing a 15 per cent project contingency above the base bid amount.

Acknowledgment:

The author would like to express appreciation to:

1. Dan Snyder, Wastewater Supervisor, for accomplishing the RBC recycle project utilizing the skills and technical expertise of plant operators resulting in a cost savings of $89,741.94 and for his assistance in assembling RBC Blower project specifications.

2. Joyce Swearingen, Public Works Secretary, for her assistance in assembling bid documents and coordinating the formal advertisement process.

3. Pat Curran, Curran-McLeod Engineering, for his informal review and advice on the RBC Blower Project.

References:

1. Ch2M Hill, "Operation and Maintenance Manual, Wilsonville Treatment Plant", September 1981.

2. Daria Wightman, P.E., Ch2M Hill, "Wilsonville Wastewater Treatment Plant Secondary Treatment Capacity Evaluation", September 1993.

3. "Oregon Revised Statutes, Volume 5, Part 2, Government Structure and Finance", 1991.

4. Technical Practice Committee, "Operation of Wastewater Treatment Plants", 1976.

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