



PRE-CONSTRUCTION MEETING SIGN IN SHEET

Project Name: _____
 Project Number: _____
 Date: _____

By signing this sheet, you acknowledge that you understand all items within the enclosed Pre-Construction Packet must be completed prior to release of water meter(s) and certificate(s) of occupancy.

NAME	EMAIL	COMPANY	TELEPHONE #	TWA Attend (Initial)
<u>Mgr of Private Dev. & Inspection Services</u> Ray Biron	rbiron@tohowater.com	Toho Water Authority	407.944.5029	
<u>Development Project Mgr.</u>		Toho Water Authority		
<u>TWA Senior Inspector</u> David Thomas	dthomas@tohowater.com	Toho Water Authority	407.414.7925	
<u>TWA Inspector</u>		Toho Water Authority		
<u>Engineer of Record</u>				
<u>Owner/Developer Rep.</u>				
<u>Underground Contractor</u>				
<u>General Contractor</u>				
<u>Contractor's Surveyor</u>				
<u>Geotechnical Engineer</u>				
Florida Underground Utility Contractor License Number	CUC-			

Toho Pre-Construction Meeting Checklist

Project Name: _____

Project Number: _____

Meeting Date: _____

Toho Inspector: _____

General

1. The Toho staff thanks you for attending this preconstruction meeting. The reason for this meeting is to ensure that all parties are working together and understand Toho requirements so Toho can accept the project and release CO's as quickly and smoothly as possible. It is the goal of the Toho Engineering Division to work as a partner in this project to its successful completion.
2. Toho understands the attendees may not be responsible for the closeout for their entity. However, it is each attendee's responsibility to provide this closeout information to the appropriate personnel. The Engineer of Record and Owner Representative will be included in all project-related emails.
3. The Project Closeout Checklist provided with this preconstruction packet must be completed by Toho personnel prior to project acceptance, request for building finals and release of CO's. All items must be completed, reviewed and accepted by Toho Water Authority unless marked NA prior to project acceptance and release of any CO's.
4. Contractor shall contact the Toho Emergency line at (407) 944-5000 and the Toho inspector or Development Project Manager (DPM) if any existing water, sewer, or reuse infrastructure is compromised during construction. No repairs to existing facilities shall take place without the knowledge and direction of Toho personnel. Existing valves may be turned at Toho's direction only.
5. Any dewatering operation associated with the project shall comply with the requirements of the appropriate regulatory agencies. Discharging into sanitary sewer systems shall not be permitted without prior approval by Toho.
6. The owner/contractor will be responsible for acquiring all right-of-way permits from the appropriate governing body prior to starting construction.
7. Any changes to phasing plans must be discussed at this meeting and approved. Provide revised plan sheets showing the proposed phasing plans to this office for review and approval. Submittal of a phasing plan does not guarantee approval. Toho allows partial water and sewer clearances. However, partial clearances do not allow for CO release. If the project wants early release of CO's for a portion of the project a phasing plan must be submitted.
8. All residential and commercial projects must be Toho Efficiency Program (TEP) compliant. Please contact Toho Water Authority's Water Conservation Coordinator, Rodney Tilley rtilley@tohowater.com or 407.944.5121 at your earliest convenience to ensure all proper paperwork is submitted and the project will meet Toho's TEP Requirements. Toho Construction Inspectors will perform TEP inspections at each property's building final inspection. If proper paperwork has not been approved by Toho's Water Conservation Coordinator then the inspection cannot occur and will result in a failed inspection, re-inspection fee and hold on the property's CO.
9. Conservation Allocation Rates provide a tiered, reduced rate for all reuse billing meters 2" or larger. To calculate the commercial allocation rate, the following information is needed.
 - Total permeable area/ master meter – total area to be irrigated by each reclaim meter 2" and larger.
 - Area should be in square feet.
 - If the area is to be supplied by multiple reclaim meters, then shade the area for each reclaim meter in different colors and give area for that meter. See example attached.
 - Assign the 911 address that is given for the reclaim meter.

10. Prior to starting construction on the project, Toho must have:
 - a. An executed copy of the Developer's Service Agreement/Sub-metering/Private LS License
 - b. Accepted plans, a hard copy of which must be on site at all times
 - c. FDEP water and sewer permit(s) or letter(s) of determination
 - d. Engineer of Record and Toho Accepted shop drawings
 - e. A copy of the contractor's Florida Underground Utility License or self-performing GC License
 - f. Notification to the inspector a minimum of 72 hours prior to beginning construction
 - g. Line locates through Sunshine State One Call of Florida – 811
 - h. Pre-existing site condition meeting with inspector
11. Gravity sewer slopes must be built as designed. Normal construction tolerances of ± 10 percent are acceptable. Slopes found to be outside of these limits shall be re-laid at the expense of the developer or contractor. Toho strongly urges the contractor to perform a gravity sewer slope survey prior to laying pavement.
12. Have Toho copied on all water, sewer, and reuse density test reports. Density test report packages submitted to Toho Water Authority must be reviewed and accepted by the DPM prior to acceptance and release of CO. Late Submittals will delay project acceptance and release of CO's.
13. Densities must be signed and sealed by an engineer (passing is 98% under pavement or 95% in grassed areas). Toho will require a quality control electronic copy of the final density package from the geo-tech firm. Provide an overall utility plan with mapped out density locations from the geo-tech firm indicating the location of all water, sewer, and reuse density test.
14. Toho is not responsible for broken meter boxes before or after project acceptance, it is the developer's responsibility to ensure the protection of the meter boxes.
15. REMINDER – All trees must have a minimum 5' horizontal separation between the root ball and Toho owned infrastructure. No permanent structures (including walls and other hardscape) can be placed within Toho easements. Walls crossing Toho infrastructure must be sleeved for 10' on either side and footers must be placed with maximum spacing away from infrastructure.
16. Landscaping or hardscape installed after the utility final can cause a building final to fail resulting in failed inspection fees, delay in re-inspection and a hold on the CO. Please make sure builders are aware of this requirement. Improvements in common areas may also result in hold on CO.

Lift Station

1. If your project has a lift station, this is often the critical path for water and sewer. Please get started on all of these items as early as possible to avoid project delays.
2. A rough-in inspection is required prior to scheduling the lift station start-up. A copy of the rough-in inspection checklist is attached. Please contact Rough_In_Inspection@tohowater.com to schedule a minimum 72 hours in advance. Below ground piping must be exposed and contractor must have equipment to perform grounding wire test.
3. For projects that have a lift station that Toho will take over, it is the developer's responsibility to purchase the telemetry system, (\$8,700) and install the RTU enclosure provided by SCADA on the rack with conduits and wires pulled from the pump control panel and a signal wire from the level transducer and a 2" water meter (\$1,000) prior to the lift station start-up. Payment for the water meter along with the address of the station and billing information must be submitted to Toho Customer Service a minimum of 15 business days prior to lift station start-up. Questions on meters or payment of fees should be directed to meterfees@tohowater.com. A lift station start-up cannot occur until the telemetry system has been installed and programmed by Toho and the meter has been set. Contact Toho SCADA personnel John Craven jcraven@tohowater.com and Allan Humphrey ahumphrey@tohowater.com a minimum of 30 business days in advance of the lift station start-up to schedule the installation and programming of the telemetry system.

4. Lift Stations with generators require FDEP permitting and lift station generator start-up.
5. Lift station record drawings require record drawing information showing location of fence, wet well, piping, panel antennae and other appurtenances as it was built. A typical yard plan is not sufficient.
6. Toho owned lift stations require the tract to be deeded to Toho by warranty deed. Quit claim deeds are not sufficient. This requires no other utilities be placed within the lift station tract. Required documentation:
 - a. Warranty Deed
 - b. Title Insurance
 - c. FIRPTA Certificate of non-foreign entity status
 - d. Seller's Affidavit
 - e. Affidavit of Authority/LLC Affidavit
 - f. Closing Statement (Acknowledgement that all costs related to closing and conveyance of the lift station is the responsibility of the Seller).

The above documents must be provided to Toho and accepted by Toho Legal Counsel prior to Toho signing the FDEP sewer clearance application. Toho legal review will take time, and Toho strongly urges you to begin this process now. Be sure to start this process early so your project is not delayed by legal review. Lift stations are often on your critical path and Toho does not want your project delayed.

Florida Department of Environmental Protection

1. If an FDEP water clearance is required, the BT sample points are provided on the permit or they are chosen by the project engineer.
2. FDEP water clearance is required prior to removing the metered temporary jumper connection(s). Simply having passing BT's is not sufficient. The Toho inspector must witness removal of jumper and surveyor must shoot abandoned jumper connections. Jumper connections shall be abandoned by closing and plugging the corporation stops.
3. BT tests expire within 60 days of being taken. FDEP Clearance applications must be turned into Toho within 50 days of the date of the first test in order to make it to FDEP prior to the samples expiring.
4. If an FDEP sewer clearance is required, submit the following test reports as required by the project:
 - a. Low air test report
 - b. CCTV report
 - c. Deflection (Mandrel) test report
 - d. Spark test report
 - e. Force Main Pigging and Pressure Test
 - f. As-built
5. When FDEP sewer clearance includes a Toho Lift Station the items mentioned in number 4 are required in addition to the requirements mentioned in the Lift Station section of this document.
6. Sewer connection inspection may be requested after FDEP sewer clearance (when applicable). Sewer connection inspection may be requested at www.tohorcbi.com.

Inspections/Inspectors

1. Toho Inspector's working hours are Monday thru Friday, 7:00 am to 3:30 pm. If overtime or holiday work is required, a request must be made in writing through the inspector a minimum of 72 hours in advance.
 - a. Overtime work on weekdays shall be a minimum of 2 hours
 - b. Overtime work on weekends and holidays shall be a minimum of 4 hours.
 - c. Overtime rates are currently \$60 / hour and holiday rates are currently \$90 / hour.
2. The Toho Inspector will complete an electronic test report(s) prior to leaving the job site. The contractor shall be required to provide and verify the correct email address(es) to send the report. If the inspector

leaves the site without ensuring a test report has been completed, please contact the Senior Inspector immediately.

3. It shall be the contractor's responsibility to provide copies of test reports needed for FDEP water and sewer clearance and Toho acceptance of the project. If test reports cannot be produced, re-testing may be required which could delay the project.
4. If existing utilities will be impacted by work associated with this project, an inspection must be scheduled with Toho prior to any work commencing to document the condition of those existing utilities. If this inspection does not occur, all utilities impacted by work will be expected to meet current Toho standards prior to Toho project acceptance regardless of pre-existing conditions. Please note, previously accepted phases are considered existing utilities.
5. The following work shall be witnessed by a Toho inspector:
 - a. All connections to the Toho system including but not limited to manhole core drills, wet taps, sewer cut-ins, etc.
 - b. If the project will tie into pipe other than DIP or C900/905 PVC, an inspector must be present while the sleeve and tapping valve or saddle and corporation stop are being installed
 - c. Installation of gravity sewer manholes and lift station wet wells in excess of 12' deep measured from approved plan finished grade
 - d. Mandrel deflection testing, which must be completed by hand. Pulling the mandrel by hand or videotaping a pull for future review without an inspector present is not permitted.
6. Any work noted above that is performed or completed without a Toho inspector present will incur fines and the project may be delayed until the extent of the work completed and impacts to Toho are determined.
7. If any changes are required due to field conditions, a revision must be submitted in writing through the engineer of record to Toho for review and approval prior to any work continuing. Inspectors are not authorized to approve revisions in the field.
8. All test reports are required on a Toho test form. The Toho Inspector will witness all tests including, but not limited to:
 - a. Gravity sewer low air & televising
 - b. Gravity sewer mandrel deflection testing per FDEP requirements
 - c. Pigging of pressure lines 4" and larger
 - d. Hydrostatic tests on pressure main(s)
 - e. Disinfection of potable main(s)
 - f. Spark testing of all lined structures
 - g. Tracer wire testing or marker tape verification
 - h. Pressure testing of tapping sleeves and saddles
 - i. Industrial waste pretreatment upon material delivery, prior to backfilling, and prior to CO
9. After all required sewer testing has been completed and FDEP sewer clearance has been received from the State, all lots/units/buildings will require a sewer connection inspection to verify proper connection to the gravity sewer system:
 - a. The project must be released by the Toho DPM to request sewer connection inspections. Any requests submitted prior to the Toho DPM releasing the project for connection will be automatically failed and will require payment of a failed inspection fee prior to requesting a re-inspection.
 - b. All sewer connection inspections must be requested at www.TohoRCBI.com. The form must be completed in its entirety in order for the submission to be accepted and an inspection scheduled.
 - c. Sewer connection inspections are required on both residential and commercial projects.
10. After all testing is complete a utility site pre-final inspection will be required. To schedule the pre-final the following items are required:
 - a. Notification to the Toho inspector a minimum of 72 hours prior to schedule the inspection.

- b. All paving including first lift of asphalt and curbing must be in with property lines evident. If all paving will not be complete for the phase being inspected, Toho will not perform a pre-final inspection.
 - c. Meter boxes must be set to final grade and fenced off for protection using silt fence.
 - d. All fire hydrants shall have been tested and tagged at the expense of the contractor or developer
 - e. If the site is deemed to be not complete by the inspector per this checklist, the Toho Standards and Specifications Manual, and Toho's Standard Details, the inspection shall be failed. The contractor will be required to bring the site up to the noted Standards, any assessed failure fees shall be paid, and the inspection rescheduled.
11. Prior to scheduling the utility site final, all items noted on the pre-final punch list must be completed and verified complete by the Toho inspector:
 - a. A hard copy of the record drawings and an 11x17 copy of the approved plans must be provided to the DPM prior to scheduling the utility site final.
 - b. The underground contractor shall be responsible for scheduling the utility site final inspection with the Toho DPM.
12. In addition to the utility site final mentioned above, each building will have its own utility building final.
 - a. Prior to releasing any Certificates of Occupancy (CO), the sewer connection inspection, utility site final inspection and all items on the project closeout checklist must be completed with the exception of GIS acceptance of the Record Drawings.
 - b. The project must be released by the Toho DPM to request building finals. Any requests submitted prior to the Toho DPM releasing the project for CO will be automatically failed and will require payment of a failed inspection fee prior to requesting a re-inspection.
 - c. All utility building final inspections must be requested at www.TohoRCBI.com. The form must be completed in its entirety in order for the submission to be accepted and an inspection scheduled.
 - d. Utility building final inspections are required on both residential and commercial projects.
13. All backflow preventers must be tested and inspected after meters have been set. A copy of the certified backflow tester's report, the tester's backflow certificate, and the backflow test machine calibration report must be submitted to the DPM and BackflowCompliance@tohowater.com. A weather-proof tag must be visible prior to CO.
14. Grease Interceptors, Oil Interceptors, Sand/Mud Traps and all other industrial pretreatment structures are required to be inspected by a Toho Environmental Inspector upon material delivery on site prior to installation, again after installation but prior to backfilling, and once again prior to release of CO. The Toho Environmental Inspectors are Richard Underwood (runderwood@tohowater.com), 407-709-4734 and Mario Hernandez (mhernandez@tohowater.com), 407-709-1801.

Meters

1. Toho Engineering department approval is required prior to requesting water meters 2" and smaller.
2. Water meters (2" and smaller) will be set within 15 business days of accepted payment. This time should be accounted for in the construction schedule. Toho Engineering Department has no control over meter set times. Failure to plan or need for CO shall not allow your project to be moved ahead of others who follow protocol.
3. Prior to payment for meters, a billing account must be created online at www.tohowater.com under create online payment account tab.
4. For meters above 2" it is the contractor's responsibility to purchase, install and have the meters inspected by Toho inspector. Meter part numbers are provided in Toho's Approved Manufacturers list which is on our website www.tohowater.com under the Developer/Contractor tab. Meters are to be installed locked out unless downstream of a metered jumper connection.

5. Once installed and inspected the developer shall be responsible for creating a billing account (see #2 above). Once the account is set up and FDEP water clearance is received, the contractor must coordinate removal of the jumper connection with the Toho inspector. The inspector will notify Toho Customer Service personnel that the meter is ready for billing. The Customer Service team will install AMR on the meter and Toho will begin billing the meter (unless it is a monitoring meter only) then AMR will be installed but no billing will occur.
6. Large Meters shall be built and inspected to Large Meter detail. Reminder, bypass size must match meter size.
7. For automatic flushing devices, please request the meter using the below link. Contractors will need to provide proof of FDEP water clearance. Curb stop, meter box and hydro-guard MUST be installed prior to requesting and paying for the meter.
<https://www.tohowater.com/developers-contractos/Pages/FLUSHING%20DEVICE%20METER.aspx>
8. Hydrant or temporary jumper meter form must be completed online, please refer to the below link. Once the meter is paid for, it may be picked up at 102 Alaska Avenue, Kissimmee, FL. Pick up times are Monday through Thursday, 8 – 10am only.
<https://www.tohowater.com/developers-contractos/Pages/Hydrant-Meter-Request.aspx>

Closeout

1. All easements must be submitted to Toho and reviewed prior to being recorded. Easement language must state that no permanent structures shall be placed in easements provided to Toho. Easements shall be provided with as-built information included on the sketch, with separations called out, to ensure infrastructure falls within provided easement with sufficient room for Toho maintenance and operation of utilities.
2. Submit a signed and sealed certified cost of construction to Toho. Certified cost must be broken down by Toho owned and private infrastructure to include unit costs for all piping and appurtenances. The following amounts must be defined by the Engineer of Record:
 - a. Inspection Fee - Private infrastructure = 1%
 - b. Inspection Fee - Public Infrastructure = 2%
 - c. Maintenance Bond - Public Infrastructure = 10%
3. A two-year maintenance bond in the amount of 10% of the certified cost of construction is required for Toho owned projects. Irrevocable letters of credit approved by the Toho Legal counsel, and checks are also acceptable. Maintenance bonds must be valid for one year from date of project acceptance. If bonds are provided too early and/or without the proper date, a bond rider shall be required prior to release of CO's.
4. For projects with new sanitary sewer and manholes, Toho shall conduct a CCTV inspection after 21 months and shall provide the following to the developer and contractor:
 - a. List of discrepancies
 - b. Corresponding project map
 - c. Copy of CCTV video inspection
 - d. Failure to address discrepancies within 15 business days may result in Toho using the maintenance bond to make necessary corrections, cleaning and/or repairs.
5. The inspection fee, all outstanding system development charges, and any other outstanding fees including but not limited to; failed inspections, failed meter sets, etc., must be paid prior to the release of certificates of occupancy.
6. Subdivisions will require an 11x17 plat survey showing the layout and a list of addresses with corresponding lot numbers prior to requesting water meters to be provided to the Toho cashiers.
7. Record Drawings must adhere to Sections 11.6 & 30 of Toho's Standards and Specifications. The attached Record Drawing Checklist must be reviewed and completed prior to submitting to Toho. Drawings must be NAV 88 and not in NGVD 29.

8. The as-built and/or record drawings submitted with FDEP water or sewer clearance applications will not be reviewed by Toho as the final record drawings that are required for project acceptance.
9. All closeout items must be provided with sufficient time for review and approval by this department prior to project acceptance and release of any CO's. The only item exempt is GIS acceptance of record drawings. Record drawings must be in for GIS review prior to release of any CO's.

Final Comments

We appreciate your feedback. If you would like to provide feedback at any time, please do not wait to until the end of the project. You can provide feedback to Ray Biron at rbiron@tohowater.com

If you have any questions during your project, please feel free to contact your Development Project Manager OR Construction Inspector.

Toho Water Authority Commercial Allocation Rate Program

The Toho Water Authority Commercial Allocation Rate program applies to all developments with reclaim meters sized at 2 inches and above. Toho Water Authority engaged a consultant to examine the development of a rate structure that would be based on individual reclaimed water allocations to encourage the efficient use of water and address customers' concerns with the previous tiered structure for reclaimed water usage based on meter size.

The goal of this type of structure is to encourage efficient reclaimed water usage on an individual customer basis recognizing the specific attributes of the property served. This approach essentially establishes a monthly irrigation budget for each customer based on the water required to sustain the vegetation on the property.

Development of Allocation Rate

Development of allocation based rates is outlined in the American Water Works Association Manual of Practice M1, Principals of Water Rates, Fees and Charges. The approach outlined in the M1 Manual for the development of irrigation allocation amounts takes into consideration the landscaped (irrigable) area of the property, the water requirements (based on soil type, climate conditions and crop type) and the efficiency of the irrigation system. The specific formula for the developing the allocations is outlined in the diagram below.

Irrigation Allocation Amount =



The specific components of the irrigation allocation formula are defined below.

Landscaped Area – The pervious area identified on the property that requires watering (area with vegetation).

Evapotranspiration (ET) – The amount of water that transpires through plant leaves combined with the amount that evaporates from the soil. ET data defines how much water is required to sustain the vegetation.

Beneficial Rainfall – The amount of rainfall that is considered beneficial for watering vegetation. This is defined as rainfall that is stored in the root zone of the landscaped area and excludes rainfall that contributes to runoff or drainage. Our analysis includes the type of underlying soil for each property which impacts that amount of rainfall that is considered beneficial given the soils ability to retain water.

Crop Type – The specific water needs based on the type of crop irrigated defined by the crop coefficient (Kc).

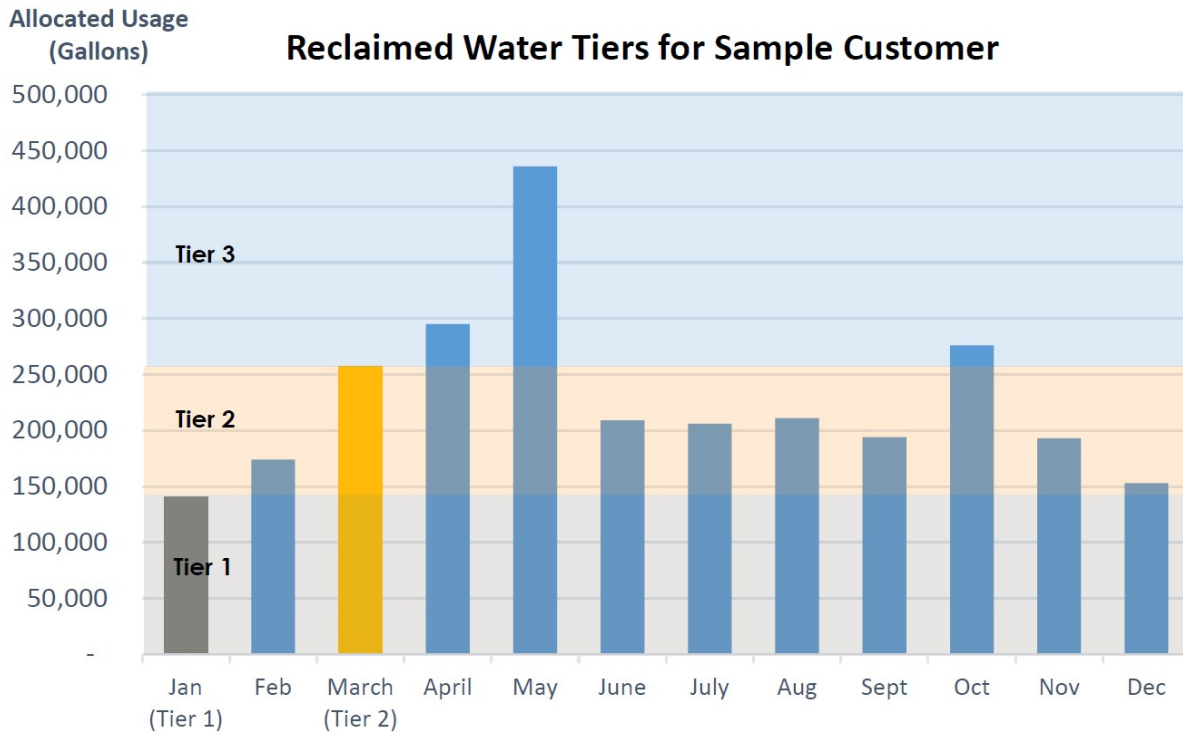
Irrigation System Efficiency – Assumed efficiency/effectiveness of the irrigation system.

Tiered Rate Structure

Once the monthly irrigation allocation analysis was completed, the next step was to determine how to implement the allocations for the commercial customer within a tiered rate structure. While the tier allocations differ for each customer, the amount of water per square foot of landscaped area by tier is the

same for all customers. The Tier 1 allocation will provide each customer with 28 inches of water per square foot of landscaped area per year and the Tier 2 allocation provides up to 45 inches per square foot per year. Tier 3 is any usage above 45 inches per square foot per year.

The following figure provides a graphical representation of the tiers for the typical reclaimed customer.



Our analysis included the determination of monthly reclaimed water bills for all reclaimed customers under the previous rates based on meter size and the change in bills under the allocation based rate structure. The results demonstrated that the vast majority of the customers will experience reductions in their bills as a result of the new structure, with a typical reduction being in the 10% to 15% range. In addition, Toho Water Authority believes that the allocation rate structure and the implementation of the Toho Efficiency Program (TEP) will result in increased water conservation effectiveness.