IN THE UNITED STATES BANKRUPTCY COURT

FOR THE DISTRICT OF DELAWARE

In re: LANDSOURCE COMMUNITIES DEVELOPMENT LLC, *et al.*[1] Debtors.	Chapter 11 Case No. 08-11111 (KJC) (Jointly Administered)
LANDSOURCE CREDITOR LITIGATION LIQUIDATING TRUST, BY AND THROUGH ITS LITIGATION TRUSTEE, Plaintiff, v. AUSTIN-FOUST ASSOCIATES, INC., Defendant.	Adv. Proc. No. 10-_____ (KJC)

COMPLAINT FOR AVOIDANCE
AND RECOVERY OF PREFERENTIAL TRANSFERS

The LandSource Creditor Litigation Liquidating Trust (the "Trust"), by and

through its Litigation Trustee ("Plaintiff" or the "Trust"), and as assignee of the rights of the

above-captioned Debtors (the "Debtors"), for its complaint for Avoidance and Recovery of

Preferential Transfers, alleges as follows:

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[1] The Associated Debtors in these cases were: California Land Company; Friendswood Development Company,
LLC; Kings Wood Development Company, L.C.; LandSource Communities Development LLC; LandSource
Communities Development Sub LLC; LandSource Holding Company, LLC; Lennar Bressi Ranch Venture, LLC;
Lennar Land Partners II; Lennar Mare Island, LLC; Lennar Moorpark, LLC; Lennar Stevenson Holdings, LLC.;
LNR-Lennar Washington Square, LLC; LSC Associates, LLC; NWHL GP LLC; The Newhall Land and Farming
Company (A California Limited Partnership); The Newhall Land and Farming Company; Southwest Communities
Development LLC; Stevenson Ranch Venture LLC; Tournament Players Club at Valencia, LLC; Valencia
Corporation; and Valencia Realty Company.

The Parties

1. On June 8, 2008 (the "Petition Date"), the Debtors commenced their bankruptcy cases by filing voluntary petitions for relief under chapter 11 of title 11, United States Code (the "Bankruptcy Code") in the United States Bankruptcy Court for the District of Delaware (the "Bankruptcy Court").

2. On July 20, 2009, the Bankruptcy Court entered its order (the "Confirmation Order") confirming the *Second Amended Chapter 11 Joint Plans of Reorganization for Landsource Communities Development LLC and Each of Its Affiliated Debtors* (the "Plan"). The Plan became effective on July 31, 2009 (the "Effective Date").

3. Pursuant to the terms of the confirmed Plan and the Confirmation Order, on the Effective Date, all avoidance actions were assigned, transferred and conveyed to the Trust along with all rights and authority to pursue and recover on all avoidance actions under the Bankruptcy Code.

4. Pursuant to the Confirmation Order, as of the Effective Date, KDW Restructuring & Liquidation Services LLC was appointed Litigation Trustee of the Trust.

5. Defendant Austin-Foust Associates, Inc., a California corporation (the "Defendant"), was, at all times material hereto, a vendor to or creditor of one or more of the Debtors.

Jurisdiction and Venue

6. The Bankruptcy Court has jurisdiction over this matter under the Bankruptcy Code and pursuant to 28 U.S.C. § 157(a) and §1334(a).

7. Venue in this district is proper pursuant to 28 U.S.C. § 1409(a).

8.   This adversary proceeding is commenced pursuant to Rule 7001(1) of the Federal Rules of Bankruptcy Procedure and is a core proceeding under 28 U.S.C. §157(b).

First Claim for Relief

(Avoidance of Preferential Transfers -- 11 U.S.C. § 547)

9.   Plaintiff repeats and realleges the allegations in paragraphs 1 through 8 above, inclusive, as though fully set forth at length.

10.   Within ninety days prior to the Petition Date, one or more of the Debtors made transfers to or for the benefit of Defendant in the total amount of $35,237.50, as more specifically described in Exhibit A attached hereto (the "Transfers") and incorporated herein by this reference.

11.   The Transfers to Defendant were each on account of an antecedent debt owed by one or more of the Debtors to Defendant before the Transfers were made.

12.   The Transfers were made while the Debtors were insolvent. Pursuant to 11 U.S.C. § 547(f), the Debtors are presumed to be insolvent during the 90 days preceding the filing of their petitions.

13.   The Transfers to Defendant enabled Defendant to receive more than it would have received if the Debtors' chapter 11 cases were cases under chapter 7, the Transfers had not been made, and the Defendant received payment on the debt to the extent provided by Title 11 of the U.S. Code.

14.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 547 that the Transfers are avoided.

Second Claim for Relief

(For Recovery Of Property -- 11 U.S.C. § 550)

15.   Plaintiff repeats and realleges the allegations contained in paragraphs 1 through 14 above, inclusive, as though fully set forth herein.

16.   As alleged above, Plaintiff is entitled to avoid the Transfers under 11 U.S.C. § 547. As the Defendant is the initial transferee of the Transfers, Plaintiff is entitled to recover for the estate the proceeds or value of the Transfers under 11 U.S.C. § 550.

17.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 550 that the proceeds or value of the Transfers is recovered for the benefit of the estate.

WHEREFORE, Plaintiff prays for judgment as follows:

1.   For a determination that the Transfers are avoidable as preferential transfers under Section 547 of the Bankruptcy Code, and that Plaintiff is entitled to recover the transfers or their value under Section 550 of the Bankruptcy Code;

2.   For costs of suit incurred herein, including, without limitation, attorneys' fees;

3.   For pre- and post-judgment interest on the judgment amount to the fullest extent allowed by applicable law; and

4.   For such other and further relief as the Court may deem just and proper.

Dated: June 1, 2010   PACHULSKI STANG ZIEHL & JONES LLP

/s/ Kathleen P. Makowski
Laura Davis Jones (Bar No. 2436)
Kathleen P. Makowski (Bar No. 3648)
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Counsel for Plaintiff, the LandSource Creditor
Litigation Liquidating Trust, by and through its
Litigation Trustee

Exhibit A

DEBTOR/PAYOR	PAYMENT DATE	PAYMENT NUMBER	PAYMENT AMOUNT	TRANSFEREE
Newhall	3/17/2008	145280	$4,450.00	AUSTIN-FOUST ASSOCIATES, INC.
Newhall	3/17/2008	145280	$2,000.00	AUSTIN-FOUST ASSOCIATES, INC.
Newhall	3/17/2008	145280	$1,540.00	AUSTIN-FOUST ASSOCIATES, INC.
Newhall	3/17/2008	145319	$3,702.50	AUSTIN-FOUST ASSOCIATES, INC.
Newhall	3/17/2008	145382	$2,005.00	AUSTIN-FOUST ASSOCIATES, INC.
Newhall	4/28/2008	146309	$5,870.00	AUSTIN-FOUST ASSOCIATES, INC.
Newhall	5/12/2008	146601	$15,670.00	AUSTIN-FOUST ASSOCIATES, INC.

1955 Workman Mill Road, Whittier, CA 90601-1400
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STEPHEN R. MAGUIN
Chief Engineer and General Manager

May 5, 2010

File: 32-00.11-00

Board of Directors
Santa Clarita Valley Sanitation District
of Los Angeles County

Directors:

Service Charge Program For Fiscal Year 2010-2011

The agenda for the May 12, 2010 meeting of the Santa Clarita Valley Sanitation District Board of Directors (Board) contains an item regarding the proposed sewerage system service charge rates for the next four years. The current service charge rate of $16.58 per month ($199 per year) per sewage unit (a sewage unit is equal to the discharge from a single family home) was adopted in July 2009 as a one-year ordinance. Consequently, the Board of Directors must establish new rates beginning with fiscal year 2010-11. Multi-year rates are being proposed as part of a planned, phased approach to service charge rate increases and to avoid the added expense of having to mail annual notices that would be required under Proposition 218 if separate rates were adopted each year. The proposed service charge rates for fiscal years 2010-11, 2011-12, 2012-13, and 2013-14 are $18.50 per month ($222 per year), $20.50 per month ($246 per year), $22.58 per month ($271 per year), and $24.67 per month ($296 per year), respectively, per single family home. Multi-family residential units will pay 60% of the adopted single-family home rate and condominiums will pay 75% of the adopted single-family home rate. Likewise, commercial and industrial dischargers will pay in proportion to their use compared to a single-family home. Dischargers with verified low water usage (particularly seniors, retirees, and those on a fixed income) can also qualify for a significantly reduced charge.

As discussed below, the recommended rate increases for the four years will support the continued operation and maintenance of sewers, pumping plants, and water reclamation plants (WRPs) in the most cost-efficient means available. They will also provide for the completion of the facilities planning and design efforts related to a program designed to comply with regulatory requirements regarding the discharge of chlorides to the Santa Clara River. The total rate increase proposed over the four years is $8.09 per month, where approximately half of the increase is for the management and operation of existing facilities and programs and the other half is to support the program to control chlorides. During the fourth year, future rate increases will be proposed based on the selected project's construction estimates, financing costs, and estimated operational costs.

Preliminary Budget

Enclosed for your review are the preliminary budget for fiscal year 2010-2011 and a list of proposed capital projects. The preliminary budget provides a comparison with the current 2009-10 budget and a breakdown of the items included in the budget. In preparing the preliminary budget, it is projected that the general revenue sources available to the District for meeting expenses during the

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coming fiscal year include cash on hand, capital improvement fund monies, a pro rata share of the ad valorem (property) taxes, industrial wastewater surcharge, interest income, and contract revenue. In addition, as discussed later, monies will be borrowed internally from the Capital Improvement Fund (CIF) to offset non-expansion related expenditures. Since the CIF contains monies set aside from connection fee revenue paid by new users that is dedicated for future capital expansions to accommodate increased flows from the new users, the monies that are borrowed from the fund will need to be reimbursed over time by the existing users through their service charges. The supplemental revenue required to meet expenses will be collected through the proposed service charges.

The preliminary budget has been prepared in accordance with the Joint Administration Agreement. This agreement allocates Joint Administration costs to each signatory District according to the ratio of the number of sewage units in a District to the total number of sewage units in all the Districts signatory to the agreement. A sewage unit represents the average daily sewage flow and strength (measured in terms of chemical oxygen demand and suspended solids) from a single-family home. This method of allocating costs considers flow as well as the strength of sewage from all types of users and is the most equitable way to distribute Joint Administration costs.

Background

In 2002, the Los Angeles Regional Water Quality Control Board (RWQCB) adopted the Upper Santa Clara River Chloride Total Maximum Daily Load (TMDL), establishing allowable chloride concentrations in the effluent discharged from the District's Valencia and Saugus Water Reclamation Plants (WRPs) to meet Basin Plan standards for the Santa Clara River. Chloride, a naturally occurring element, is one of the main components of common table salt and is present in significant quantities in the local drinking water supply. In fact, the background concentration of chloride in the region's imported drinking water supply approaches and, on rare occasions especially during severe drought conditions, has exceeded the chloride standard. Additionally, the groundwater supply in the region is another source of chloride. Chloride is currently not removed in the treatment process at the Sanitation District's WRPs, and passes through to the Santa Clara River in the effluent discharge. Chloride levels in the river can potentially affect the beneficial uses of the river, including downstream agriculture and groundwater resources.

Chloride in the Santa Clara River has been a regulatory concern dating back to the mid-1970s when the RWQCB adopted the 1975 Basin Plan establishing stringent chloride objectives for reaches of the Santa Clara River impacted by the Sanitation District's WRP discharges. The RWQCB subsequently adopted discharge permits in 1989 for the Saugus and Valencia WRPs that included effluent limits for chloride that were unattainable with the treatment system in place at that time. The Sanitation District has consistently challenged these discharge limits, and the facility modifications they would necessitate, from their time of imposition.

As adopted in 2002, the effluent chloride limits established in the TMDL to meet the standard would have required the construction of large-scale advanced treatment and brine disposal facilities costing well over $500 million. The 2002 TMDL required that these facilities be constructed by May 2018. Because of this enormous cost, the District funded and participated with multiple interested parties in a series of collaborative studies under the control of the RWQCB to reassess the appropriateness of the limits and whether the limits could be revised to reduce the cost of compliance while still fully protecting the Santa Clara River. In 2006, after completion of the literature review study that found that the protective chloride level for salt-sensitive agriculture is 100-117 mg/L, the RWQCB shortened the implementation schedule by 2 years to May 2016, under strong political pressure from the Ventura

County agricultural community. Subsequently, in 2007, the State Water Resources Control Board affirmed the shortened TMDL schedule in response to the District's challenge. After 2007, the remaining collaborative studies focused on development of an alternative TMDL compliance approach that would minimize the cost to the community. In 2008, this alternative approach was finalized as the Alternative Compliance Plan, a watershed-based approach to managing chlorides in Santa Clara River and underlying groundwater basins. Implementation of the Alternative Compliance Plan would involve a number of watershed stakeholders including the Sanitation District, water utilities from Los Angeles and Ventura Counties, and the Ventura County Agricultural Water Quality Coalition who have entered into partnership through a Memorandum of Understanding (MOU). In December 2008, the RWQCB adopted relaxed limits based on the results of those collaborative studies, that were contingent upon the implementation of the Alternative Compliance Plan, but shortened the compliance schedule to 2015. These relaxed limits provided sufficient regulatory relief to reduce the cost of compliance from over $500 million to $250 million.

Concurrent with work related to the technical studies discussed above, staff evaluated the impact of self-regenerating water softeners in the Sanitation District and concluded that approximately one third of the overall chloride loading to the WRPs could be eliminated through the removal of these units. Prior to 2006, the Sanitation District had hoped that the removal of self-regenerating water softeners and adequate regulatory relief from the RWQCB would be enough to comply with the TMDL. However, after the State's 2007 decision affirming the shortened implementation schedule and the protective level for salt–sensitive agriculture was 100-117 mg/L, the prospects for compliance without construction of some advanced treatment were very small, and as a result focus shifted to the development of the Alternative Compliance Plan.

The community should be commended for approving Measure S (the 2008 ballot initiative to discontinue the use of self-regenerating water softeners) and taking out its self-regenerating water softeners, as this action saved the Sanitation District over $70 million in facility costs. Although some advanced treatment facilities are still required, discontinuing the use of self-regenerating water softeners was an important factor in obtaining RWQCB approval of the relaxed standards.

The Alternative Compliance Plan was presented to the Board in 2009, along with a rate-setting plan to support the estimated $250 million project   The staff recommendation at that time was to increase rates over a seven-year period to support the continued operation and maintenance of existing facilities and programs along with the construction, debt service on financing options, and increased operations and maintenance (O&M) costs for the project. Due to the large rate increases proposed and the short timeframe to implement the rate structure, the Board opted to not approve the recommended rate package. The Board directed staff to open discussions with the RWQCB to achieve some form of additional regulatory relief, and to pursue grant funding opportunities.

Over the past year in response to Board direction, Districts' staff has been discussing with the RWQCB, a phased approach to the construction of required facilities that would spread project costs over more years. This approach has the advantage of minimizing the impact to ratepayers and allows sufficient time to solicit grant funding; however, this approach is contingent on the RWQCB also approving a significant extension of the compliance schedule. In addition, District staff has been specifically pursuing further relaxation of the chloride standard during drought conditions, which would result in the elimination of a significant component of the original Alternative Compliance Plan and produce additional cost savings. With this revision, the Alternative Compliance Plan cost would be reduced to $209 million, but is still contingent upon RWQCB action to formally approve of the further relaxation of the chloride standard during drought conditions.

Significant Budgetary Expenditures

Over the next four fiscal years, significant budgetary expenditures will be incurred related to on-going capital programs including relief sewers, biosolids management, operations and maintenance (O&M) expenses and the planning and design efforts associated with the revised Alternative Compliance Plan. These items are discussed below.

The on-going capital program includes the completion of an upgrade of the power distribution system at Valencia WRP, including the replacement of the emergency generator. These improvements, with projected expenditures of approximately $2.2 million in fiscal year 2010-11, will help to ensure operational performance in the event of a power outage. Additionally, an upgrade to the steam boiler system to provide heating for the digesters at the Valencia WRP will be completed this year, with $850,000 of projected costs occurring in fiscal year 2010-11.

Work on relief of the Castaic Trunk Sewer will be completed in fiscal year 2010-11. The remaining work on the sewer line, which is being funded using connection fees deposited in the Capital Improvement Fund (CIF), has an estimated cost of $1.5 million. Construction of a redundant force main at the Castaic Pump Plant as mandated by EPA to ensure reliability will cost $3 million in fiscal year 2010-11. A siphon under the Santa Clara River as part of the District's Main Relief Trunk Sewer, Section 1A Extension, will be completed in fiscal year 2010-11 at a remaining cost of $1 million. The siphon will replace a temporary pump station and force main that was attached to an existing railroad bridge after the previous sewer was damaged following heavy winter storms. Of the total estimated cost of $10 million for the siphon, approximately $800,000 was funded through an EPA grant.

In addition, the management of biosolids, the material removed from the incoming wastewater at WRPs, continues to be an ever more important part of the treatment process. Currently, biosolids from the Saugus and Valencia WRPs are hauled to remote locations for reuse on agricultural lands. In addition to the benefit of reclaiming and restoring depleted agricultural lands, this practice helps preserve the limited landfill capacity available in Los Angeles County. With increasingly more stringent regulatory requirements and local county ordinances limiting lower cost biosolids management options, the cost of developing new management alternatives and transporting biosolids to acceptable land application sites has risen steadily. The overall impact has been a 40% increase in biosolids management costs over the past five years.

O&M costs in total have risen approximately 5.5% in the last year at the WRPs. This increase is partly due to a significant amount of scheduled equipment repair and rehabilitation work in fiscal year 2010-11, expenditures that would not be expected every year. In addition, the District is now committed to performing annual groundwater monitoring as part of studies to assess chloride levels in useable aquifers. These studies will add approximately $600,000 to O&M in fiscal year 2010-11, and as much as $500,000 per year thereafter. However, projected 2010-11 O&M costs related to the base operations of the WRPs (i.e. fuel, chemicals, utilities, supplies, salaries, etc.) have been reduced through operational cutbacks to fiscal year 2009-10 budget levels (i.e. no increase).

The Alternative Compliance Plan, now revised to include two phases, includes ultraviolet light (UV) disinfection, small-scale advanced treatment using microfiltration and reverse osmosis (MF/RO) with local brine disposal, and high salt groundwater export facilities to manage water quality and water resources in the watershed. Supplemental water purchases and releases to dilute chlorides in the river may also be required should the RWQCB not provide chloride standard relief during drought conditions. However, these costs are not included in the revised Alternative Compliance Plan and represent over $40

million in savings. While still very expensive at $209 million, the revised Alternative Compliance Plan project is expected to save over $700 per single-family home (SFH) per year compared to the cost of the project that would have been required to meet the original state requirement and $100 per SFH per year compared to the cost of the original Alternative Compliance Plan proposed in 2009.

Over the next four years, the District will complete facilities planning efforts and begin design of the Phase I advanced treatment facilities at a cost of $14 million. Under the proposed two-phased approach, Phase I construction will be completed in fiscal year 2016-17 and Phase II design and construction will be completed in fiscal year 2021-22. Although expenditures will significantly increase after the next four years, financing strategies discussed below will moderate requisite rate increases.

Financing Strategy

The District's strategy to finance the large expenditures discussed above centers on minimizing service charge rate increases through long-term financing options such as State Revolving Fund loans and the issuance of bonds. These debt mechanisms will spread the payment of project costs over a long period of time; 20 years for state loans, and 30 years for bonds. The debt service that would be associated with the revised Alternative Compliance Plan will not impact the service charge rates during the next four-year period. The District is also pursuing grant monies through congressional appropriations that could offset the project costs by as much as $10 million. Internal borrowing from the District's cash reserves in the CIF will be used to offset expenditures so that service charge rate increases are minimized. The District borrowed $5 million from the CIF in fiscal year 2008-09 pursuant to the terms of the existing resolution authorizing the borrowing of these funds. The 2009-10 budget reflected an anticipated borrowing of $11 million from the CIF for purposes of covering cash flow requirements for the first half of fiscal year 2010-11. This borrowing to cover cash flow has been delayed to fiscal year 2010-11, bringing the total being borrowed from the CIF over the next four years to $14 million. Lastly, it is assumed that annual coverage requirements on debt service for bonds and loans will be minimally met. In summary, the District's long-term budget projections are based on assumptions (i.e. pending RWQCB drought condition chloride standard relief and approval of a longer implementation schedule, and successful procurement of grants) that have dramatically reduced the overall project cost and spread that cost over a longer period of time.

Even with the significant borrowing and procurement of grants discussed above, the system costs including debt service must be paid from service charges. Based on the best available information concerning the continued operation of existing facilities and programs, the revised Alternative Compliance Plan, and the anticipated debt service requirements to establish long-term financing and stability, the service charge must be increased steadily over the next thirteen-year period to approximately $49 per sewage unit per month ($590 per year) in fiscal year 2022-23 (the year that maximum debt service payments and full system O&M begins). Since this projected $32.50 per month increase is largely related to the capital projects needed to comply with regulatory requirements adopted by the RWQCB, it is important to note that any increase in project cost or shortening of the assumed implementation schedule, or an inability to secure grants, would significantly increase the service charge rates needed and/or reduce the timeframe available to raise rates. Approximately 73% ($23.75 per month) of the long term projected increase will go toward debt service and operating expenses associated with the revised Alternative Compliance Plan, while inflation and other miscellaneous capital upgrades will contribute approximately 27% ($8.75 per month) of the increase. The impact of the revised Alternative Compliance Plan on the long-term rate projections is more significant than the projected impact over the next four years due to future debt service and operating expenses associated with the project.

Proposed Rate Increases

In an effort to minimize the impact to ratepayers as much as possible in the current economic climate, it is proposed the rate of increase be exponential with reasonably uniform percentage increases from year to year. This means that the dollar amount of the proposed increase will be lower in the earlier years (e.g. $1.92 per month in the first year) and gradually increase each year thereafter (e.g. $3.33 per month in the thirteenth year). Accordingly, the recommended service charge rates for a single-family home for the first four years are as follows:

	Current 2009-10	Proposed 2010-11	Proposed 2011-12	Proposed 2012-13	Proposed 2013-14
$/Month	$16.58	$18.50	$20.50	$22.58	$24.67
$/Year	$199.00	$222.00	$246.00	$271.00	$296.00

As discussed earlier, apartments and condominiums pay a lower rate. Single-family homes and apartments and with low water usage (normally fixed income or retired households) can qualify for a reduced charge. Table 1 illustrates that, even with the proposed increase for fiscal year 2010-11, the District's service charge rate remains significantly lower than current rates for other comparable sewerage agencies in the Santa Clara River Valley and other communities in the area.

At this time, the recommendation is for only four years of service charge rate increases, even though the implementation of the revised Alternative Compliance Plan will require rate increases over a thirteen-year period. The future rates will be more accurately determined in the fourth year once construction bids are received and all funding sources needed for the full implementation of the revised Alternative Compliance Plan are better known.

It is important to note that the proposed financing strategy, which attempts to address very high cost regulatory requirements in a severely impacted economy, carries some risk to the District. The financing assumptions rely heavily on borrowing from the CIF, not only in the near term, but later in the project implementation as well. As the only source of cash reserves during this time frame, the District's ability to address emergencies, unforeseen increases in operating costs, or future additional regulatory requirements without additional significant rate increases could be impacted. Additionally, the ability to fund expansion-related facilities with CIF monies may be compromised during this time. While a strategy of minimizing rates is desirable for the ratepayers, it has the unintended impact of minimizing debt service coverage, which could result in a lower bond rating – and a higher interest rate on bonds.

Connection Fees

Connection fee monies are collected from new users of the sewerage system and those expanding their discharge to pay for expansion-related portions of the capital facilities. The Board periodically approves connection fee rate increases to ensure that the monies collected through the connection fee program reflect the cost of incrementally expanding the sewerage system. Last year, staff proposed three years of connection fee rate increases based on the identified future expansion-related capital projects and the incremental cost of construction to accommodate new dischargers, which has increased dramatically in the last several years. The proposed increases at that time would have taken the connection fee rate from $3,300 per single family home in fiscal year 2008-09 to $4,500 in fiscal year 2009-10, and ultimately to $4,980 in fiscal year 2011-12.
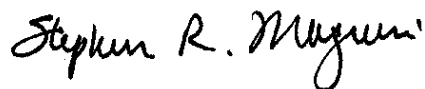
In response to community input at that time related to the poor economy and the importance of keeping commercial business ventures viable in the City of Santa Clarita, the Board agreed to adopt a $500 increase in the connection fee rate for fiscal year 2009-10 only and delayed the effective date of the increase to January 1, 2010. While acknowledging that connection fee rates would ultimately need to be increased to the full cost of incremental expansion, the Board directed staff to return in a year with a proposal for a more gradual phased increase over time. Based on current construction costs, it is recommended that connection fee rate be increased to $5,200 over a three-year period. The recommended connection fee rates for a new single-family home are as follows:

Current 2009-10	Proposed 2010-11	Proposed 2011-12	Proposed 2012-13
$3,800	$4,300	$4,800	$5,200

Summary of Required Actions

State law requires the Board of Directors to order a Service Charge Report (copy attached) be filed with the District Clerk and to instruct the District Clerk to mail individual Proposition 218 notices (copy of draft notice attached) to all impacted property owners and to publish newspaper notices to inform the public of the date, time, and place for a public hearing on the Service Charge Report. Although changes to the industrial wastewater surcharge and connection fee rates do not require a Proposition 218 notice, a public hearing on these rates must be held prior to introduction of the implementing rate ordinances. It is tentatively recommended that a combined public hearing be set for June 30, 2010 at 6:30 p.m. in the Santa Clarita City Council Chambers for the purpose of public discussion of the proposed service charge, its continued collection on the property tax roll, the proposed industrial wastewater surcharge rates, and the proposed connection fee rates. After the public hearing is closed, the Board must consider adoption of the Service Charge Report and introduction of ordinances establishing the service charge rates, the industrial wastewater surcharge rates, and the connection fee rates and providing for the collection of the fiscal year 2010-11 service charge on the property tax roll. Adoption of the ordinances, which requires the affirmative vote of two-thirds (2/3) of the members of the Board of Directors (2 affirmative votes), is proposed to occur on July 14, 2010.

Very truly yours,

Stephen R. Maguin

SRM:ew
Enclosures

Table 1

Service Charge Rates
Of Comparable Sewerage Agencies
($ per month per single-family home)

Community	Current Rate	Proposed Service Charge Rate			
		2010-11	2011-12	2012-13	2013-14
Santa Clarita San. District	16.58	18.50[a]	20.50[a]	$22.58[a]	$24.67[a]
Ventura	25.00	N/A[b]	N/A[b]	N/A[b]	N/A[b]
Lancaster	25.83	30.00	N/A[b]	N/A[b]	N/A[b]
Palmdale	27.16	31.75	N/A[b]	N/A[b]	N/A[b]
Glendale	33.70	N/A[b]	N/A[b]	N/A[b]	N/A[b]
City of Los Angeles	35.24	35.24[c]	N/A[b]	N/A[b]	N/A[b]
Ojai	52.07	N/A[b]	N/A[b]	N/A[b]	N/A[b]
Santa Paula	59.39	N/A[b]	N/A[b]	N/A[b]	N/A[b]
Fillmore	80.00	98.00[c]	102.00[c]	N/A[b]	N/A[b]

[a] The District also receives $5.26 per month of ad valorem (property) taxes. The County Department of Public Works charges $3.38 per month for local sewer maintenance.

[b] Future rates are unknown for these agencies, but rates should be as high as they are currently.

[c] Projected rate, based on staff discussions.

SANTA CLARITA VALLEY SANITATION DISTRICT OF LOS ANGELES COUNTY
SEWERAGE SYSTEM PRELIMINARY BUDGET FOR 2010-11

REQUIREMENTS FOR FISCAL YEAR
JULY 1 THROUGH JUNE 30:

APPROPRIATION:	2009-10	2010-11
O&M - Joint Administration	$ 754,000	$ 883,000
O&M - Technical Services	2,518,000	2,586,250
O&M - Local District Sewers	626,000	361,000
O&M - Treatment Facilities	15,774,000	16,963,000
Capital - Joint Administration	59,000	72,000
Capital - Local Capital	18,116,000	12,942,000
Bond Repayment	3,438,000	3,436,000
Loan Repayment	3,025,000	3,025,000
Contingency for Emergency	1,000,000	1,000,000
	$ 45,310,000	$ 41,268,250
CASH FLOW REQUIREMENT (for period JULY 1 THROUGH DECEMBER 31)	16,760,000	12,734,000
TOTAL BUDGET:	$ 62,070,000	$ 54,002,000

ESTIMATED CASH AND REVENUE:

	2009-10	2010-11
Cash on Hand July 1	$ 11,394,000	$ 6,445,000
Transfer from Capital Improvement Fund	10,553,000	7,987,000
Taxes	5,924,000	6,315,000
Bonds	3,300,000	-
Grants	533,000	-
Service Charge	17,752,000	20,029,000
Industrial Waste	348,000	329,000
Interest and Contracts	1,266,000	979,000
Loan from Capital Improvement Fund	11,000,000	11,918,000
TOTAL RESOURCES:	$ 62,070,000	$ 54,002,000

SERVICE CHARGE CALCULATION

	2009-10	2010-11
Number of Sewage Units	89,207	90,219
Charge Per Sewage Unit	$ 199	$ 222

SANTA CLARITA VALLEY SANITATION DISTRICT OF LOS ANGELES COUNTY
July 1, 2010 Through June 30, 2011

PROPOSED CAPITAL PROJECTS

JOINT ADMINISTRATION: $ 72,000

LOCAL:

1. Castaic PP Redundant Force Main	$ 3,000,000
2. Castaic TS Relief Phase I	1,500,000
3. D32 Main Relief Section 1A Phase II	1,000,000
4. Castaic Pumping Plant	65,000
5. SCV Facilities Planning / Monitoring Activities	950,000
6. SCV Water Softener / Rebate Program	100,000
7. Ventura County Groundwater Studies	1,200,000
8. Valencia WRP: Power Distribution Modifications	2,200,000
9. Valencia WRP: Steam Boiler System Upgrade	850,000
10. Valencia WRP: Filtrate Storage	100,000
11. Valencia WRP Operations	1,410,000
12. Saugus WRP Operations	567,000

$ 12,942,000

TOTAL PROPOSED CAPITAL PROJECTS: **$ 13,014,000**

SANTA CLARITA VALLEY SANITATION DISTRICT
SERVICE CHARGE REPORT FOR FISCAL YEAR 2010-2011

INTRODUCTION

Santa Clarita Valley Sanitation District of Los Angeles County encompasses a portion of the city of Santa Clarita and unincorporated Los Angeles County.

Santa Clarita Valley Sanitation District provides wastewater management services for the area described above. The District is responsible for the operation and maintenance of the Saugus and Valencia Water Reclamation Plants and the large trunk sewers which convey wastewater to these facilities.. These services are essential to protect the public health of the people served by the system.

Santa Clarita Valley Sanitation District must provide the revenue required to operate and maintain its facilities. The general revenue sources currently available to Santa Clarita Valley Sanitation District include cash on hand, capital improvement fund monies, a pro rata share of the ad valorem (property) taxes, industrial waste surcharge, interest income, and contract revenue. For fiscal year 2010-2011, the proposed expenditures exceed these revenue sources and necessitate a service charge to supplement the other revenue sources. The Board of Directors of Santa Clarita Valley Sanitation District will be asked to consider adoption of an ordinance establishing the service charge rate and providing for its collection on the property tax roll.

PROPOSED SYSTEM DESCRIPTION

The required supplemental revenue under the Service Charge Ordinance will be allocated among classes of developed parcels of real property on the basis of use of the sewerage system. The revenue derived from the service charge will be used for operation and maintenance and capital costs.

All industrial dischargers in Santa Clarita Valley Sanitation District discharging more than 1.0 million gallons per year are required to file a wastewater surcharge statement as prescribed in the Wastewater Ordinance to pay their appropriate share of the costs based on their use of the sewerage system. All other users of the sewerage system, except for contractual and local government users, will pay service charges.

The basic term used to define the service charge is a sewage unit. A sewage unit represents the average daily quantity of sewage flow and strength from a single-family home measured in terms of flow, chemical oxygen demand, and suspended solids. The number of sewage units (SU) per unit of measure shall be determined by the following formula:

$$ SU = A\left(\frac{FLOW_{avg}}{FLOW_{sfh}}\right) + B\left(\frac{COD_{avg}}{COD_{sfh}}\right) + C\left(\frac{SS_{avg}}{SS_{sfh}}\right) $$

where:

A = The proportion of the total operation and maintenance and capital costs required for conveyance, treatment, and disposal of wastewater for the fiscal year which is attributable to flow;

B = The proportion of the total operation and maintenance and capital costs required for conveyance, treatment, and disposal of wastewater for the fiscal year which is attributable to COD;

C = The proportion of the total operation and maintenance and capital costs required for conveyance, treatment, and disposal of wastewater for the fiscal year which is attributable to suspended solids;

$FLOW_{sfh}$ =   Average flow of wastewater from a single-family home in gallons per day;

COD_{sfh} =   Average loading of COD in the wastewater from a single-family home in pounds per day;

SS_{sfh} =   Average loading of suspended solids in the wastewater from a single-family home in pounds per day;

$FLOW_{avg}$ =   Estimated flow of wastewater which will enter the sewerage system from a user in gallons per day;

COD_{avg} =   Estimated loading of COD which will enter the sewerage system from a user in pounds per day;

SS_{avg} =   Estimated loading of suspended solids which will enter the sewerage system from a user in pounds per day.

For fiscal year 2010-2011, the proportions of the total operation and maintenance and capital costs attributable to flow, chemical oxygen demand, and suspended solids have been assigned the following values:

$$A = 0.2798$$
$$B = 0.3239$$
$$C = 0.3963$$

The service charge for each sewage unit is determined by dividing the total required supplemental revenue by the total number of sewage units in the District. The service charge for each parcel is determined by multiplying the service charge for each sewage unit by the number of sewage units attributable to the parcel, which in turn, is determined by the class of real property and the sewage unit formula and the flow, COD and SS loadings from Table 1, which shows the corresponding value for each class of real property in Santa Clarita Valley Sanitation District.

Based upon presently anticipated sources of funds, the service charge rate for fiscal year 2010-2011 is $222.00 per sewage unit. Parcels with significantly lower water usage may be eligible for a reduced rate pursuant to the terms of the Master Service Charge Ordinance of Santa Clarita Valley Sanitation District of Los Angeles County.

DESCRIPTION OF PARCELS RECEIVING SERVICES AND
IDENTIFICATION OF AMOUNT OF CHARGE FOR EACH PARCEL

All parcels of real property within the 2010-2011 Tax Rate Areas as shown in Table 2 are receiving or benefiting from the services and facilities of Santa Clarita Valley Sanitation District. Said parcels are more particularly described in maps prepared in accordance with Section 327, Revenue and Taxation Code, which are on file in the office of the County Assessor, which maps are hereby incorporated herein by reference.

All commercial and institutional parcels assessed a service charge based on the Los Angeles County Assessor's current tax roll shall be charged on the basis of not less than one (1.0) sewage unit.

No charge shall be imposed on the owner or owners of any parcels as to which the fair market value of improvements is less than $1,000 as determined on the basis of the Assessor's current tax roll. This assumption is predicated on the fact that this type of parcel would be a vacant piece of land; however, should subsequent evaluation reveal that the property is not vacant, then an appropriate service charge would be levied.

TABLE 1

LOADINGS FOR EACH CLASS OF LAND USE

DESCRIPTION	UNIT OF MEASURE	FLOW (Gallons per Day)	COD (Pounds per Day)	SUSPENDED SOLIDS (Pounds per Day)
RESIDENTIAL				
Single Family Home	Dwelling Unit	260	1.22	0.59
Condominiums	Dwelling Unit	195	0.92	0.44
Multi-Unit Residential	Dwelling Unit	156	0.73	0.35
Mobile Home Parks	No. of Spaces	156	0.73	0.35
COMMERCIAL				
Hotel/Motel/Rooming House	Room	125	0.54	0.28
Store	1000 ft^2	100	0.43	0.23
Supermarket	1000 ft^2	150	2.00	1.00
Shopping Center	1000 ft^2	325	3.00	1.17
Regional Mall	1000 ft^2	150	2.10	0.77
Office Building	1000 ft^2	200	0.86	0.45
Medical, Dental, Veterinary Clinic or Building	1000 ft^2	300	1.29	0.68
Restaurant	1000 ft^2	1,000	16.68	5.00
Indoor Theatre	1000 ft^2	125	0.54	0.28
Car Wash				
Tunnel - No Recycling	1000 ft^2	3,700	15.86	8.33
Tunnel - Recycling	1000 ft^2	2,700	11.74	6.16
Wand	1000 ft^2	700	3.00	1.58
Bank, Credit Union	1000 ft^2	100	0.43	0.23
Service Shop, Vehicle Maintenance & Repair Shop	1000 ft^2	100	0.43	0.23
Animal Kennels	1000 ft^2	100	0.43	0.23
Gas Station	1000 ft^2	100	0.43	0.23
Auto Sales	1000 ft^2	100	0.43	0.23
Wholesale Outlet	1000 ft^2	100	0.43	0.23
Nursery/Greenhouse	1000 ft^2	25	0.11	0.06
Manufacturing	1000 ft^2	200	1.86	0.70
Light Manufacturing	1000 ft^2	25	0.23	0.09
Lumber Yard	1000 ft^2	25	0.23	0.09
Warehousing	1000 ft^2	25	0.23	0.09
Open Storage	1000 ft^2	25	0.23	0.09
Drive-in Theatre	1000 ft^2	20	0.09	0.05
Night Club	1000 ft^2	350	1.50	0.79
Bowling/Skating	1000 ft^2	150	1.76	0.55
Club& Lodge Halls	1000 ft^2	125	0.54	0.27
Auditorium, Amusement	1000 ft^2	350	1.50	0.79
Golf Course and Park (Structures and Improvements)	1000 ft^2	100	0.43	0.23
Campground, Marina, Recreational Vehicle Park	Sites, Slips, or Spaces	55	0.34	0.14
Convalescent Home	Bed	125	0.54	0.28
Horse Stables	Stalls	25	0.23	0.09
Laundromat	1000 ft^2	3,825	16.40	8.61

DESCRIPTION	UNIT OF MEASURE	FLOW (Gallons per Day)	COD (Pounds per Day)	SUSPENDED SOLIDS (Pounds per Day)
COMMERCIAL				
Mortuary, Funeral Home	1000 ft^2	100	1.33	0.67
Health Spa, Gymnasium				
With Showers	1000 ft^2	600	2.58	1.35
Without Showers	1000 ft^2	300	1.29	0.68
Convention Center, Fairground, Racetrack, Sports Stadium/Arena	Average Daily Attendance	10	0.04	0.02
INSTITUTIONAL				
College/University	Student	20	0.09	0.05
Private School	1000 ft^2	200	0.86	0.45
Library, Museum	1000 ft^2	100	0.43	0.23
Post Office (Local)	1000 ft^2	100	0.43	0.23
Post Office (Regional)	1000 ft^2	25	0.23	0.09
Church	1000 ft^2	50	0.21	0.11

TABLE 2

TAX RATE AREAS IN SANTA CLARITA VALLEY SANITATION DISTRICT

000221	000704	001623	006642	008675
000223	000708	001635	006646	008676
000227	000717	001689	006648	008690
000274	000719	001731	006665	008704
000275	000729	001753	006705	008706
000281	000732	001754	006707	008710
000282	000769	001778	006786	008712
000325	000777	001811	006818	008717
000326	000801	001862	006819	008733
000330	000802	002242	006822	008742
000331	000803	002469	006823	008762
000332	000824	002473	006825	008777
000351	000826	002477	006828	008779
000353	000837	002500	006838	008780
000360	000887	002504	006865	008828
000362	000896	002603	007152	008845
000364	000906	002628	007231	008847
000386	000907	002694	007643	008857
000387	000908	002764	007646	008858
000389	000918	002910	007647	008861
000390	000933	002927	007648	008865
000391	000935	002933	007649	008866
000393	000936	003693	007650	008900
000397	000937	003767	007651	008905
000405	000939	003819	007652	008907
000409	000947	003823	007653	008912
000420	000948	003826	007655	008913
000431	000955	003889	007669	008951
000439	000965	004624	007670	008970
000442	000966	004749	007673	008971
000448	000967	004951	007676	008972
000450	000975	004957	007677	008973
000472	000976	004967	007679	008974
000508	000977	005006	007711	008980
000520	000978	005796	007822	008982
000550	000979	005797	008014	008999
000554	001274	005798	008015	009004
000564	001297	006285	008046	009276
000567	001299	006419	008129	009298
000569	001300	006477	008379	009313
000570	001301	006562	008387	009314
000584	001302	006594	008544	009322
000597	001303	006595	008556	009341
000601	001327	006606	008581	009358
000603	001340	006614	008582	009360
000612	001369	006633	008586	009370
000613	001403	006634	008659	009406
000621	001574	006635	008672	009423
000699	001616	006641	008674	009425

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009441	010770	011735	012451	012849
009481	010771	011736	012452	012876
009523	010791	011737	012453	012877
009533	010796	011766	012457	012878
009541	010798	011782	012458	012887
009573	010804	011828	012459	012925
009579	010805	011829	012461	012926
009718	010811	011830	012474	012927
009729	010812	011833	012475	012928
009755	010813	011834	012478	012929
009785	010814	011835	012488	012936
009786	010815	011836	012490	012937
009797	010816	011850	012491	012947
009807	010817	011860	012492	012999
009863	010818	011879	012493	013000
009864	010819	011885	012494	013072
009865	010820	011886	012500	013073
009875	010821	011888	012501	013076
009879	010823	011889	012502	013089
009981	010840	011892	012541	013122
009982	011073	011901	012543	013123
009984	011129	011904	012544	013129
009987	011158	011906	012551	013142
010216	011165	011915	012552	013145
010286	011166	012067	012557	013147
010292	011167	012081	012569	013149
010293	011181	012096	012574	013150
010294	011237	012097	012589	013151
010494	011238	012098	012594	013153
010522	011239	012135	012595	013163
010523	011244	012137	012596	013164
010524	011245	012147	012597	013166
010526	011246	012148	012605	013202
010527	011317	012162	012610	013203
010535	011327	012169	012613	013225
010536	011351	012176	012651	013301
010571	011371	012193	012655	013313
010577	011372	012194	012676	013317
010578	011413	012195	012686	013319
010579	011428	012196	012687	013322
010582	011432	012202	012688	013348
010595	011454	012204	012692	013349
010596	011506	012205	012702	013350
010618	011620	012283	012707	013351
010721	011631	012289	012756	013352
010727	011634	012310	012757	013373
010732	011637	012311	012758	013379
010738	011638	012436	012778	013380
010742	011639	012438	012780	013429
010743	011668	012440	012781	013442
010746	011675	012446	012782	013443
010754	011682	012448	012783	013444
010764	011683	012449	012794	013445
010769	011704	012450	012820	013448

013449	013696	013888	014047	014178
013450	013697	013902	014048	014218
013460	013698	013912	014049	014219
013462	013699	013963	014050	014221
013473	013700	013964	014051	014222
013487	013701	013965	014052	014223
013488	013702	013967	014053	014224
013489	013703	013968	014054	014225
013492	013704	013969	014056	014226
013493	013705	013970	014059	014227
013495	013706	013971	014069	014232
013496	013707	013972	014076	014233
013497	013727	013973	014083	014234
013500	013728	013974	014084	014235
013503	013737	013976	014085	014236
013505	013744	013977	014086	014237
013507	013745	013978	014087	014238
013513	013746	013979	014088	014239
013552	013757	013981	014089	014240
013577	013759	013982	014090	014241
013578	013760	013989	014091	014242
013579	013761	013990	014092	014243
013580	013762	013994	014093	014261
013581	013763	013995	014094	014262
013593	013768	014005	014095	014269
013597	013769	014006	014096	014272
013598	013777	014007	014097	014277
013600	013778	014009	014098	014278
013601	013783	014010	014099	014280
013611	013784	014013	014100	014282
013612	013787	014014	014101	014285
013613	013788	014015	014102	014286
013614	013793	014016	014103	014287
013624	013794	014017	014104	014309
013626	013796	014018	014105	014409
013641	013797	014021	014106	014410
013642	013798	014022	014107	014411
013643	013814	014023	014108	014412
013644	013816	014025	014109	014423
013645	013818	014026	014110	014424
013646	013819	014027	014111	014454
013647	013828	014028	014112	014455
013648	013830	014029	014113	014457
013649	013835	014032	014114	014458
013652	013840	014033	014115	014460
013653	013854	014034	014116	014462
013654	013855	014035	014127	014464
013655	013866	014036	014128	014465
013656	013867	014037	014129	014466
013658	013873	014041	014147	014467
013682	013878	014043	014148	014468
013689	013879	014044	014166	014469
013690	013880	014045	014176	014470
013692	013882	014046	014177	014471

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014472	014556	014647	014696	014792
014473	014557	014650	014697	014793
014474	014559	014656	014698	014794
014475	014565	014657	014699	014795
014477	014568	014661	014700	014796
014482	014569	014662	014701	014809
014483	014570	014663	014706	014810
014493	014577	014664	014708	014812
014497	014578	014665	014709	014813
014526	014579	014667	014710	014814
014528	014584	014668	014711	014820
014529	014611	014669	014718	014821
014534	014617	014683	014719	014832
014535	014632	014684	014720	014836
014539	014633	014685	014730	014845
014546	014642	014686	014733	014847
014547	014643	014687	014734	
014550	014644	014689	014739	
014552	014645	014695	014741	

SANITATION DISTRICTS OF LOS ANGELES COUNTY

1955 Workman Mill Road, P.O. Box 4000, Whittier, CA 90607-4000
Telephone: (800) 388-4602

NOTICE OF PUBLIC HEARING
SANTA CLARITA VALLEY SANITATION DISTRICT OF LOS ANGELES COUNTY
REGARDING A PROPOSED SEWER SERVICE CHARGE RATE INCREASE
TO THE OWNER OF RECORD OF

Assessor's Parcel No. 1234-567-890
1234 Main Street, Santa Clarita, CA 91310

The Santa Clarita Valley Sanitation District is the public agency that takes care of the sewage you generate. Lately, there's been a lot of talk in the community about the District and wastewater management. In particular, you may have heard things about chloride, salt-sensitive agricultural crops, major capital facilities, and, most important, a proposed increase in the service charge rate. The District is proposing to increase the rates over the next four years, half of which is necessary to continue to operate the existing facilities, and the other half of the proposed increase is related to regulatory requirements regarding chloride. We want you to have a good understanding of what's really proposed. To help answer questions and provide you with more background, we're going to be holding a series of information meetings in the community as shown on the back side of this notice. All of this is to lead up to a public hearing to be held on June 30 in the Santa Clarita City Hall when the District's Board of Directors will consider your input before deciding on whether to enact approve the rates.

Chloride in the Santa Clara River has been a regulatory concern since the mid 1970s when the Los Angeles Regional Water Quality Control Board (the State regulatory agency) first began to address chloride limits for reaches of the Santa Clara River impacted by the District's treatment plants as required by federal and state law. The District, recognizing the potential financial impacts to Santa Clarita residents, engaged the RWQCB in significant debate as to what constituted an appropriate chloride limit. In 2002, despite our objections, the RWQCB adopted what is known as the Upper Santa Clara River Chloride Total Maximum Daily Load, which established strict effluent discharge limits for chlorides. District staff continued to challenge these discharge limits and, subsequently, the RWQCB agreed to allow scientific studies, under RWQCB oversight, to demonstrate whether the established limits were overly restrictive. Finally, in 2006, the RWQCB truncated the studies and ordered the District to begin work on facilities necessary to bring the treatment plants into compliance.

As originally adopted by the RWQCB, the chloride limits would have required the construction of new facilities costing well over $500 million. Because of this enormous cost, the District, in collaboration with multiple interested parties, explored options that would continue to protect the users of the River, but at a much lower cost to the community. The impact of self-regenerating water softeners was evaluated and it was determined that approximately one third of the overall chloride loading could be eliminated through the removal of these units. Based on that assessment, you - the ratepayer - took the initiative to pass Measure S in 2008 to discontinue the use of self-regenerating water softeners, saving over $70 million in projected facility costs. Although the water softener ban made major strides in lowering the chloride levels in the treatment plant discharge, it was not sufficient to bring the plants into full compliance with the discharge limits. Full compliance, without the need for advanced treatment, would have required significantly higher chloride limits during drought conditions, which the District fought so hard to get but that the RWQCB was not willing to grant. As a result, an alternative approach (the Alternative Compliance Plan) to managing chlorides in the Santa Clara River and underlying groundwater basins, with a new cost estimate of $250 million, was developed. The RWQCB was willing to conditionally revise the chloride limits providing some regulatory relief, contingent upon the Alternative Compliance Plan project being undertaken.

Consequently, the Alternative Compliance Plan was presented to the District's Board of Directors last year, along with a rate-setting plan to support the project. Taking into account the concerns raised by the community, the Board rejected the proposed service charge rate increase and requested further negotiations with the RWQCB. With the assistance of the Board Chairperson, we have been able to renew meaningful discussions with the RWQCB in the development of a phased approach to the construction of required facilities that would spread project costs over significantly more years. In addition, we have been working with the RWQCB regarding slightly higher limits during drought conditions. Such relief could produce an additional $41 million in savings with the elimination of one of the elements of the original Alternative Compliance. Implementation of this revised project proposal, with a new estimated cost of $209 million, is dependent upon the RWQCB taking action to formally adopt the two modifications that have been discussed. Lastly, although with the current economic climate limiting the availability of state and federal appropriations, we have been aggressively pursuing grant-funding opportunities to further reduce the cost of the project to Santa Clarita residents, and will continue to do so. Unfortunately, noncompliance with the RWQCB mandates will result in substantial fines.

Based on all of the above, a service charge rate increase is being proposed for each of the next four fiscal years. The recommended rate increases are $1.92 per month ($23.00 per year) per sewage unit (a sewage unit is equal to the discharge from a single family home) for the first year, $2.00 per month ($24.00) per sewage unit for the second year, $2.08 per month ($25.00 per year) per sewage unit for the third year, and $2.08 per month ($25.00 per year) per sewage unit for the fourth year. This will bring the rate to $24.67 per month per sewage unit by fiscal year 2013-14, as shown in the table on the reverse side. The total proposed increase over the four years is $8.09 per month, about half of which is needed to operate and maintain existing facilities and half to comply with RWQCB requirements. As seen in that table, even with the proposed rate increases, the service charge rate in Santa Clarita will still be less than what comparable cities and wastewater agencies are currently charging.

Even with all the efforts to reduce costs and find alternative sources of funding, future rate increases in the service charge rates beyond four years will probably be necessary. However, as mentioned above, only four years of service charge rate increases are being proposed at this time. This will provide for the continued operation and maintenance of the existing sewers, pumping plants, and treatment plants in the most cost-efficient means available. At the same time, it will allow planning and design work to be completed. During the fourth year, future rate increases will be proposed based on the selected project's construction estimates, financing costs, and operational costs.

Si usted desea recibir este aviso y más información en español, por favor llame a los Distritos Sanitarios al teléfono (800) 388-4602. También usted nos puede visitar en nuestra pagina en la Internet en www.lacsd.org.

COUNTY SANITATION DISTRICTS OF
LOS ANGELES COUNTY
P.O. BOX 4000
WHITTIER, CA 90607-4000

John and Mary Smith
1234 Main Street
Santa Clarita, CA 91310

Information Meetings:

Location	Date	Time(s)
West Ranch Town Council Meeting	June 2	6:30 pm
Santa Clarita City Hall	June 3	7:00 pm
Santa Clarita City Hall	June 7	1:00 pm
Santa Clarita City Hall	June 9	7:00 pm
Castaic Area Town Council Meeting	June 16	6:30 pm
Santa Clarita City Hall	June 16	1:00 pm and 7:00 pm
Santa Clarita City Hall	June 21	7:00 pm

Public Hearing:

Location	Date	Time(s)
Santa Clarita City Hall	June 30	6:30 pm

Service Charge Rate Comparison
(For comparable communities)

Community	Service Charge	
	per month	per year
Santa Clarita[a] (2013-14)	24.67	296.00
Ventura (current)	25.00	300.00
Lancaster (2010-11)	30.00	360.00
Palmdale (2010-11)	31.75	381.00
Glendale (current)	33.70	404.40
Los Angeles (current)	35.24	422.83
Ojai (2010-11)	52.07	624.84
Santa Paula (current)	59.39	712.68
Fillmore (current)	80.00	960.00

[a] The District also receives $5.26 per month of ad valorem taxes. The County Department of Public Works charges $3.38 per month for local sewer maintenance.

(continued from previous side)

You are currently paying $16.58 per month ($199.00 per year) for the wastewater you discharge from your property. If the proposed rate increase is approved, your charges in fiscal years 2010-11, 2011-12, 2012-13, and 2013-14 will be $18.50 per month ($222.00 per year), $20.50 per month ($246.00 per year), $22.58 per month ($271.00 per year), and $24.67 per month ($296 per year), respectively.

Single-family homes that have a substantially lower water consumption rate than an average single-family home may be eligible for a reduced charge. If your water usage is less than or equal to 123 hcf (hundred cubic feet) per year (252 gallons per day), you may qualify. If you believe you qualify, please send a completed Claim Form, Water Consumption Form for Rebate, and copies of your water bills showing your water consumption in the last completed fiscal year (July 1 through June 30 period) to the address above. We will review and notify you of your qualification. Once you qualify, the reduced rate will stay in effect until you sell your property. You may download these forms from the Districts' Internet web site (www.lacsd.org) or you may contact the District and we will mail you a copy.

As shown above, the District's Board of Directors will hold a public hearing on June 30, 2010, to consider public input on the proposed sewer service charge rates. The hearing will be held at 6:30 p.m. in the Santa Clarita City Council Chambers, 23920 W. Valencia Boulevard. Written comments may also be submitted through the mail to the District at P.O. Box 4000, Whittier, CA 90607-4000 and must be received by 10:00 a.m. on June 30, 2010. Additional information can be obtained by calling us toll free at (800) 388-4602 between 7:30 am and 4:00 pm Monday through Friday, contacting us by e-mail at RATES@lacsd.org, writing to us at P.O. Box 4000, Whittier, CA 90607-4000, or visiting our web site at www.lacsd.org. Please include your name, address, telephone number, and Assessor's Parcel Number (shown on other side) with any correspondence to help us promptly respond.

Please note that the proposed rate increase only goes towards meeting the expenses of the existing users. None of it is used for the construction of facilities to accommodate new/future users. There is separate connection fee program, whereby new users pay for the cost of constructing expanded facilities at the time they connect to the sewer system. Likewise, none of the service charge money will be used for the Newhall Ranch project, which is located in a different sanitation district.

¿Acerca de qué es este aviso?
El Distrito Sanitario Santa Clarita Valley del Condado de Los Angeles propone aumentar la tasa por Cargo de Servicio de alcantarillado y tratamiento de aguas residuales. Este aviso discute las razones y la cantidad del aumento propuesto. Además, se le notifica que se conducirá una Audiencia Pública el día 30 de Junio del 2010 a las 6:30 p.m. en la Cámara de Consejo de la Ciudad de Santa Clarita, que se encuentra localizada en la siguiente dirección 23920 W. Valencia Boulevard, para considerar los aumentos que se proponen. Si usted recibió este aviso, los aumentos propuestos de Cargo de Servicio son aplicables a su propiedad. ¡Favor de notar que ESTO NO ES UN COBRO! ¡No mande dinero!

IN THE UNITED STATES BANKRUPTCY COURT

FOR THE DISTRICT OF DELAWARE

In re: LANDSOURCE COMMUNITIES DEVELOPMENT LLC, *et al.*[1] Debtors.	Chapter 11 Case No. 08-11111 (KJC) (Jointly Administered)

LANDSOURCE CREDITOR LITIGATION LIQUIDATING TRUST, BY AND THROUGH ITS LITIGATION TRUSTEE,
 	
                  Plaintiff.
 	
    v.
 	
PSOMAS & ASSOCIATES,
 	
                  Defendant.
	Adv. Proc. No. 10-_____ (KJC)

COMPLAINT FOR AVOIDANCE
AND RECOVERY OF PREFERENTIAL TRANSFERS

The LandSource Creditor Litigation Liquidating Trust (the "Trust"), by and

through its Litigation Trustee ("Plaintiff" or the "Trust"), and as assignee of the rights of the

above-captioned Debtors (the "Debtors"), for its complaint for Avoidance and Recovery of

Preferential Transfers, alleges as follows:

---

[1] The Associated Debtors in these cases were: California Land Company; Friendswood Development Company, LLC; Kings Wood Development Company, L.C.; LandSource Communities Development LLC; LandSource Communities Development Sub LLC; LandSource Holding Company, LLC; Lennar Bressi Ranch Venture, LLC; Lennar Land Partners II; Lennar Mare Island, LLC; Lennar Moorpark, LLC; Lennar Stevenson Holdings, LLC.; LNR-Lennar Washington Square, LLC; LSC Associates, LLC; NWHL GP LLC; The Newhall Land and Farming Company (A California Limited Partnership); The Newhall Land and Farming Company; Southwest Communities Development LLC; Stevenson Ranch Venture LLC; Tournament Players Club at Valencia, LLC; Valencia Corporation; and Valencia Realty Company.

The Parties

1.   On June 8, 2008 (the "Petition Date"), the Debtors commenced their bankruptcy cases by filing voluntary petitions for relief under chapter 11 of title 11, United States Code (the "Bankruptcy Code") in the United States Bankruptcy Court for the District of Delaware (the "Bankruptcy Court").

2.   On July 20, 2009, the Bankruptcy Court entered its order (the "Confirmation Order") confirming the *Second Amended Chapter 11 Joint Plans of Reorganization for Landsource Communities Development LLC and Each of Its Affiliated Debtors* (the "Plan"). The Plan became effective on July 31, 2009 (the "Effective Date").

3.   Pursuant to the terms of the confirmed Plan and the Confirmation Order, on the Effective Date, all avoidance actions were assigned, transferred and conveyed to the Trust along with all rights and authority to pursue and recover on all avoidance actions under the Bankruptcy Code.

4.   Pursuant to the Confirmation Order, as of the Effective Date, KDW Restructuring & Liquidation Services LLC was appointed Litigation Trustee of the Trust.

5.   Defendant Psomas & Associates, a California corporation (the "Defendant"), was, at all times material hereto, a vendor to or creditor of one or more of the Debtors.

Jurisdiction and Venue

6.   The Bankruptcy Court has jurisdiction over this matter under the Bankruptcy Code and pursuant to 28 U.S.C. § 157(a) and § 1334(a).

7.   Venue in this district is proper pursuant to 28 U.S.C. § 1409(a).

8.   This adversary proceeding is commenced pursuant to Rule 7001(1) of the Federal Rules of Bankruptcy Procedure and is a core proceeding under 28 U.S.C. §157(b).

First Claim for Relief

(Avoidance of Preferential Transfers -- 11 U.S.C. § 547)

9.   Plaintiff repeats and realleges the allegations in paragraphs 1 through 8 above, inclusive, as though fully set forth at length.

10.   Within ninety days prior to the Petition Date, one or more of the Debtors made transfers to or for the benefit of Defendant in the total amount of $423,832.10, as more specifically described in Exhibit A attached hereto (the "Transfers") and incorporated herein by this reference.

11.   The Transfers to Defendant were each on account of an antecedent debt owed by one or more of the Debtors to Defendant before the Transfers were made.

12.   The Transfers were made while the Debtors were insolvent. Pursuant to 11 U.S.C. § 547(f), the Debtors are presumed to be insolvent during the 90 days preceding the filing of their petitions.

13.   The Transfers to Defendant enabled Defendant to receive more than it would have received if the Debtors' chapter 11 cases were cases under chapter 7, the Transfers had not been made, and the Defendant received payment on the debt to the extent provided by Title 11 of the U.S. Code.

14.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 547 that the

Transfers are avoided.

Second Claim for Relief

(For Recovery Of Property -- 11 U.S.C. § 550)

15.   Plaintiff repeats and realleges the allegations contained in paragraphs 1 through 14 above, inclusive, as though fully set forth herein.

16.   As alleged above, Plaintiff is entitled to avoid the Transfers under 11 U.S.C. § 547. As the Defendant is the initial transferee of the Transfers, Plaintiff is entitled to recover for the estate the proceeds or value of the Transfers under 11 U.S.C. § 550.

17.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 550 that the proceeds or value of the Transfers is recovered for the benefit of the estate.

WHEREFORE, Plaintiff prays for judgment as follows:

1.   For a determination that the Transfers are avoidable as preferential transfers under Section 547 of the Bankruptcy Code, and that Plaintiff is entitled to recover the transfers or their value under Section 550 of the Bankruptcy Code;

2.   For costs of suit incurred herein, including, without limitation, attorneys' fees;

3.   For pre- and post-judgment interest on the judgment amount to the fullest extent allowed by applicable law; and

4.   For such other and further relief as the Court may deem just and proper.

Dated: June 7, 2010

MESSANA ROSNER & STERN LLP

/s/ Frederick B. Rosner
By: Frederick B. Rosner (DE #3995)
Scott Leonhardt (DE #4885)
1000 N. West Street, Suite 1200
Wilmington, DE 19801
Telephone: (302) 295-4877
frosner@mrs-law.com

and

KELLEY DRYE & WARREN LLP
Benjamin Blaustein, Esq.
101 Park Avenue
New York, New York 1078
Telephone: (212) 808-7800
Facsimile: (212) 808-7897

Counsel for Plaintiff, the LandSource Creditor
Litigation Liquidating Trust, by and through its
Litigation Trustee

EXHIBIT A

Exhibit A

DEBTOR PAYOR	PAYMENT DATE	PAYMENT NUMBER	PAYMENT AMOUNT	TRANSFEREE
Newhall	3/17/08	145362	$5,845.00	Psomas
Newhall	3/17/08	145362	$2,560.00	Psomas
Newhall	3/17/08	145362	$717.50	Psomas
Newhall	3/17/08	145362	$36.83	Psomas
Newhall	3/17/08	145429	$162,357.50	Psomas
Newhall	3/31/08	145684	$28,877.89	Psomas
Newhall	3/31/08	145684	$12,699.30	Psomas
Newhall	3/31/08	145695	$13,560.50	Psomas
Newhall	3/31/08	145695	$160.05	Psomas
Newhall	4/7/08	145737	$43,142.50	Psomas
Newhall	4/7/08	145737	$2,380.00	Psomas
Newhall	4/7/08	145737	$338.00	Psomas
Newhall	4/21/08	146103	$24,855.00	Psomas
Newhall	4/21/08	146103	$862.50	Psomas
Newhall	4/21/08	146136	$21,466.50	Psomas
Newhall	4/21/08	146136	$4,086.00	Psomas
Newhall	5/5/08	146396	$9,782.00	Psomas
Newhall	5/5/08	146396	$2,954.50	Psomas
Newhall	5/5/08	146396	$157.55	Psomas
Newhall	5/5/08	146396	$119.50	Psomas
Newhall	5/5/08	146414	$9,655.60	Psomas
Newhall	5/5/08	146414	$742.26	Psomas
Newhall	5/5/08	146414	$707.00	Psomas
Newhall	5/5/08	146414	$415.41	Psomas
Newhall	5/5/08	146414	$199.30	Psomas
Newhall	5/5/08	146414	$25.73	Psomas
Newhall	5/5/08	146477	$16,340.00	Psomas
Newhall	5/5/08	146477	$12,720.00	Psomas
Newhall	5/5/08	146477	$2,600.00	Psomas
Newhall	5/5/08	146477	$2,398.00	Psomas
Newhall	5/5/08	146477	$2,164.00	Psomas
Newhall	5/5/08	146477	$1,920.00	Psomas
Newhall	5/5/08	146477	$1,146.00	Psomas
Newhall	5/5/08	146477	$161.94	Psomas
Newhall	5/5/08	146477	$103.73	Psomas
Newhall	5/5/08	146477	$63.41	Psomas
Newhall	5/5/08	146477	$25.18	Psomas
Newhall	5/5/08	146500	$1,000.00	Psomas
Newhall	5/5/08	146514	$351.02	Psomas

DEBTOR PAYOR	PAYMENT DATE	PAYMENT NUMBER	PAYMENT AMOUNT	TRANSFEREE
Newhall	5/12/08	146584	$15,284.50	Psomas
Newhall	5/12/08	146584	$1,667.50	Psomas
Newhall	5/12/08	146584	$1,209.84	Psomas
Newhall	5/12/08	146595	$3,445.31	Psomas
Newhall	5/12/08	146595	$2,080.00	Psomas
Newhall	5/12/08	146595	$1,599.00	Psomas
Newhall	5/12/08	146638	$8,848.75	Psomas
		TOTAL	$423,832.10	

IN THE UNITED STATES BANKRUPTCY COURT

FOR THE DISTRICT OF DELAWARE

In re: LANDSOURCE COMMUNITIES DEVELOPMENT LLC, *et al.*[1] Debtors.	Chapter 11 Case No. 08-11111 (KJC) (Jointly Administered)
LANDSOURCE CREDITOR LITIGATION LIQUIDATING TRUST, BY AND THROUGH ITS LITIGATION TRUSTEE, Plaintiff, v. IMPACT SCIENCES, INC., Defendant.	Adv. Proc. No. 10-_____ (KJC)

**COMPLAINT FOR AVOIDANCE
AND RECOVERY OF PREFERENTIAL TRANSFERS**

The LandSource Creditor Litigation Liquidating Trust (the "Trust"), by and

through its Litigation Trustee ("Plaintiff" or the "Trust"), and as assignee of the rights of the

above-captioned Debtors (the "Debtors"), for its complaint for Avoidance and Recovery of

Preferential Transfers, alleges as follows:

---

[1] The Associated Debtors in these cases were: California Land Company; Friendswood Development Company, LLC; Kings Wood Development Company, L.C.; LandSource Communities Development LLC; LandSource Communities Development Sub LLC; LandSource Holding Company, LLC; Lennar Bressi Ranch Venture, LLC; Lennar Land Partners II; Lennar Mare Island, LLC; Lennar Moorpark, LLC; Lennar Stevenson Holdings, LLC.; LNR-Lennar Washington Square, LLC; LSC Associates, LLC; NWHL GP LLC; The Newhall Land and Farming Company (A California Limited Partnership); The Newhall Land and Farming Company; Southwest Communities Development LLC; Stevenson Ranch Venture LLC; Tournament Players Club at Valencia, LLC; Valencia Corporation; and Valencia Realty Company.

The Parties

1. On June 8, 2008 (the "Petition Date"), the Debtors commenced their bankruptcy cases by filing voluntary petitions for relief under chapter 11 of title 11, United States Code (the "Bankruptcy Code") in the United States Bankruptcy Court for the District of Delaware (the "Bankruptcy Court").

2. On July 20, 2009, the Bankruptcy Court entered its order (the "Confirmation Order") confirming the *Second Amended Chapter 11 Joint Plans of Reorganization for Landsource Communities Development LLC and Each of Its Affiliated Debtors* (the "Plan"). The Plan became effective on July 31, 2009 (the "Effective Date").

3. Pursuant to the terms of the confirmed Plan and the Confirmation Order, on the Effective Date, all avoidance actions were assigned, transferred and conveyed to the Trust along with all rights and authority to pursue and recover on all avoidance actions under the Bankruptcy Code.

4. Pursuant to the Confirmation Order, as of the Effective Date, KDW Restructuring & Liquidation Services LLC was appointed Litigation Trustee of the Trust.

5. Defendant Impact Sciences, Inc., a California corporation (the "Defendant"), was, at all times material hereto, a vendor to or creditor of one or more of the Debtors.

Jurisdiction and Venue

6. The Bankruptcy Court has jurisdiction over this matter under the Bankruptcy Code and pursuant to 28 U.S.C. § 157(a) and §1334(a).

7. Venue in this district is proper pursuant to 28 U.S.C. § 1409(a).

8. This adversary proceeding is commenced pursuant to Rule 7001(1) of the Federal

Rules of Bankruptcy Procedure and is a core proceeding under 28 U.S.C. §157(b).

First Claim for Relief

(Avoidance of Preferential Transfers -- 11 U.S.C. § 547)

9.   Plaintiff repeats and realleges the allegations in paragraphs 1 through 8 above, inclusive, as though fully set forth at length.

10.   Within ninety days prior to the Petition Date, one or more of the Debtors made transfers to or for the benefit of Defendant in the total amount of $376,557.46, as more specifically described in Exhibit A attached hereto (the "Transfers") and incorporated herein by this reference.

11.   The Transfers to Defendant were each on account of an antecedent debt owed by one or more of the Debtors to Defendant before the Transfers were made.

12.   The Transfers were made while the Debtors were insolvent. Pursuant to 11 U.S.C. § 547(f), the Debtors are presumed to be insolvent during the 90 days preceding the filing of their petitions.

13.   The Transfers to Defendant enabled Defendant to receive more than it would have received if the Debtors' chapter 11 cases were cases under chapter 7, the Transfers had not been made, and the Defendant received payment on the debt to the extent provided by Title 11 of the U.S. Code.

14.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 547 that the Transfers are avoided.

Second Claim for Relief

(For Recovery Of Property -- 11 U.S.C. § 550)

15.   Plaintiff repeats and realleges the allegations contained in paragraphs 1 through 14 above, inclusive, as though fully set forth herein.

16.   As alleged above, Plaintiff is entitled to avoid the Transfers under 11 U.S.C. § 547. As the Defendant is the initial transferee of the Transfers, Plaintiff is entitled to recover for the estate the proceeds or value of the Transfers under 11 U.S.C. § 550.

17.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 550 that the proceeds or value of the Transfers is recovered for the benefit of the estate.

WHEREFORE, Plaintiff prays for judgment as follows:

1.   For a determination that the Transfers are avoidable as preferential transfers under Section 547 of the Bankruptcy Code, and that Plaintiff is entitled to recover the transfers or their value under Section 550 of the Bankruptcy Code;

2.   For costs of suit incurred herein, including, without limitation, attorneys' fees;

3.   For pre- and post-judgment interest on the judgment amount to the fullest extent allowed by applicable law; and

4.   For such other and further relief as the Court may deem just and proper.

Dated: June 2, 2010

PACHULSKI STANG ZIEHL & JONES LLP

/s/ Kathleen P. Makowski
Laura Davis Jones (Bar No. 2436)
Kathleen P. Makowski (Bar No. 3648)
Steven J. Kahn (CA Bar No. 076933)
919 North Market Street, 17th Floor
P.O. Box 8705
Wilmington, DE 19899-8705 (Courier No. 19801)
Telephone: (302) 652-4100
Facsimile: (302) 652-4400
Email: ljones@pszjlaw.com
        kmakowski@pszjlaw.com
        skahn@pszjlaw.com

Counsel for Plaintiff, the LandSource Creditor
Litigation Liquidating Trust, by and through its
Litigation Trustee

Exhibit A

DEBTOR/PAYOR	PAYMENT DATE	PAYMENT NUMBER	PAYMENT AMOUNT	TRANSFEREE
Newhall	3/10/2008	145208	$105.40	IMPACT SCIENCES, INC.
Newhall	3/10/2008	145208	$55.20	IMPACT SCIENCES, INC.
Newhall	3/17/2008	145396	$11,153.83	IMPACT SCIENCES, INC.
Newhall	3/17/2008	145396	$9,999.03	IMPACT SCIENCES, INC.
Newhall	3/17/2008	145396	$1,866.66	IMPACT SCIENCES, INC.
Newhall	3/17/2008	145396	$500.00	IMPACT SCIENCES, INC.
Newhall	4/7/2008	145794	$1,127.50	IMPACT SCIENCES, INC.
Newhall	4/7/2008	145794	$312.01	IMPACT SCIENCES, INC.
Newhall	4/28/2008	146156	$32,058.60	IMPACT SCIENCES, INC.
Newhall	4/28/2008	146156	$8,015.25	IMPACT SCIENCES, INC.
Newhall	5/5/2008	146408	$250,000.00	IMPACT SCIENCES, INC.
Newhall	5/5/2008	146408	$3,897.62	IMPACT SCIENCES, INC.
Newhall	5/12/2008	146588	$50,000.00	IMPACT SCIENCES, INC.
Newhall	5/12/2008	146588	$7,466.36	IMPACT SCIENCES, INC.

IN THE UNITED STATES BANKRUPTCY COURT

FOR THE DISTRICT OF DELAWARE

In re: LANDSOURCE COMMUNITIES DEVELOPMENT LLC, *et al.*[1] Debtors.	Chapter 11 Case No. 08-11111 (KJC) (Jointly Administered)
LANDSOURCE CREDITOR LITIGATION LIQUIDATING TRUST, BY AND THROUGH ITS LITIGATION TRUSTEE, Plaintiff, v. GSI WATER SOLUTIONS, INC., Defendant.	Adv. Proc. No. 10-_____ (KJC)

COMPLAINT FOR AVOIDANCE
AND RECOVERY OF PREFERENTIAL TRANSFERS

The LandSource Creditor Litigation Liquidating Trust (the "Trust"), by and

through its Litigation Trustee ("Plaintiff" or the "Trust"), and as assignee of the rights of the

above-captioned Debtors (the "Debtors"), for its complaint for Avoidance and Recovery of

Preferential Transfers, alleges as follows:

---

[1] The Associated Debtors in these cases were: California Land Company; Friendswood Development Company, LLC; Kings Wood Development Company, L.C.; LandSource Communities Development LLC; LandSource Communities Development Sub LLC; LandSource Holding Company, LLC; Lennar Bressi Ranch Venture, LLC; Lennar Land Partners II; Lennar Mare Island, LLC; Lennar Moorpark, LLC; Lennar Stevenson Holdings, LLC.; LNR-Lennar Washington Square, LLC; LSC Associates, LLC; NWHL GP LLC; The Newhall Land and Farming Company (A California Limited Partnership); The Newhall Land and Farming Company; Southwest Communities Development LLC; Stevenson Ranch Venture LLC; Tournament Players Club at Valencia, LLC; Valencia Corporation; and Valencia Realty Company.

0811111100602000000000052

The Parties

1. On June 8, 2008 (the "Petition Date"), the Debtors commenced their bankruptcy cases by filing voluntary petitions for relief under chapter 11 of title 11, United States Code (the "Bankruptcy Code") in the United States Bankruptcy Court for the District of Delaware (the "Bankruptcy Court").

2. On July 20, 2009, the Bankruptcy Court entered its order (the "Confirmation Order") confirming the *Second Amended Chapter 11 Joint Plans of Reorganization for Landsource Communities Development LLC and Each of Its Affiliated Debtors* (the "Plan"). The Plan became effective on July 31, 2009 (the "Effective Date").

3. Pursuant to the terms of the confirmed Plan and the Confirmation Order, on the Effective Date, all avoidance actions were assigned, transferred and conveyed to the Trust along with all rights and authority to pursue and recover on all avoidance actions under the Bankruptcy Code.

4. Pursuant to the Confirmation Order, as of the Effective Date, KDW Restructuring & Liquidation Services LLC was appointed Litigation Trustee of the Trust.

5. Defendant GSI Water Solutions, Inc., an Oregon corporation (the "Defendant"), was, at all times material hereto, a vendor to or creditor of one or more of the Debtors.

Jurisdiction and Venue

6. The Bankruptcy Court has jurisdiction over this matter under the Bankruptcy Code and pursuant to 28 U.S.C. § 157(a) and §1334(a).

7. Venue in this district is proper pursuant to 28 U.S.C. § 1409(a).

8. This adversary proceeding is commenced pursuant to Rule 7001(1) of the Federal

Rules of Bankruptcy Procedure and is a core proceeding under 28 U.S.C. §157(b).

First Claim for Relief

(Avoidance of Preferential Transfers -- 11 U.S.C. § 547)

9.   Plaintiff repeats and realleges the allegations in paragraphs 1 through 8 above, inclusive, as though fully set forth at length.

10.   Within ninety days prior to the Petition Date, one or more of the Debtors made transfers to or for the benefit of Defendant in the total amount of $35,108.70 as more specifically described in Exhibit A attached hereto (the "Transfers") and incorporated herein by this reference.

11.   The Transfers to Defendant were each on account of an antecedent debt owed by one or more of the Debtors to Defendant before the Transfers were made.

12.   The Transfers were made while the Debtors were insolvent. Pursuant to 11 U.S.C. § 547(f), the Debtors are presumed to be insolvent during the 90 days preceding the filing of their petitions.

13.   The Transfers to Defendant enabled Defendant to receive more than it would have received if the Debtors' chapter 11 cases were cases under chapter 7, the Transfers had not been made, and the Defendant received payment on the debt to the extent provided by Title 11 of the U.S. Code.

14.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 547 that the Transfers are avoided.

Second Claim for Relief

(For Recovery Of Property -- 11 U.S.C. § 550)

15.   Plaintiff repeats and realleges the allegations contained in paragraphs 1 through 14 above, inclusive, as though fully set forth herein.

16.   As alleged above, Plaintiff is entitled to avoid the Transfers under 11 U.S.C. § 547. As the Defendant is the initial transferee of the Transfers, Plaintiff is entitled to recover for the estate the proceeds or value of the Transfers under 11 U.S.C. § 550.

17.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 550 that the proceeds or value of the Transfers is recovered for the benefit of the estate.

WHEREFORE, Plaintiff prays for judgment as follows:

1.   For a determination that the Transfers are avoidable as preferential transfers under Section 547 of the Bankruptcy Code, and that Plaintiff is entitled to recover the transfers or their value under Section 550 of the Bankruptcy Code;

2.   For costs of suit incurred herein, including, without limitation, attorneys' fees;

3.   For pre- and post-judgment interest on the judgment amount to the fullest extent allowed by applicable law; and

4.   For such other and further relief as the Court may deem just and proper.

Dated: June 2, 2010

PACHULSKI STANG ZIEHL & JONES LLP

/s/ Kathleen P. Makowski
Laura Davis Jones (Bar No. 2436)
Kathleen P. Makowski (Bar No. 3648)
Steven J. Kahn (CA Bar No. 076933)
919 North Market Street, 17th Floor
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         kmakowski@pszjlaw.com
         skahn@pszjlaw.com

Counsel for Plaintiff, the LandSource Creditor
Litigation Liquidating Trust, by and through its
Litigation Trustee

Exhibit A

DEBTOR/PAYOR	PAYMENT DATE	PAYMENT NUMBER	PAYMENT AMOUNT	TRANSFEREE
Newhall	3/31/2008	145691	$5,279.48	GSI WATER SOLUTIONS, INC.
Newhall	4/21/2008	146126	$8,076.50	GSI WATER SOLUTIONS, INC.
Newhall	4/21/2008	146126	$4,167.14	GSI WATER SOLUTIONS, INC.
Newhall	4/28/2008	146155	$12,062.74	GSI WATER SOLUTIONS, INC.
Newhall	5/12/2008	146578	$5,522.84	GSI WATER SOLUTIONS, INC.

IN THE UNITED STATES BANKRUPTCY COURT

FOR THE DISTRICT OF DELAWARE

In re: LANDSOURCE COMMUNITIES DEVELOPMENT LLC, *et al.*[1] Debtors.	Chapter 11 Case No. 08-11111 (KJC) (Jointly Administered)
LANDSOURCE CREDITOR LITIGATION LIQUIDATING TRUST, BY AND THROUGH ITS LITIGATION TRUSTEE, Plaintiff. v. R.T. FRANKIAN & ASSOCIATES, Defendant.	Adv. Proc. No. 10-_____ (KJC)

COMPLAINT FOR AVOIDANCE
AND RECOVERY OF PREFERENTIAL TRANSFERS

The LandSource Creditor Litigation Liquidating Trust (the "Trust"), by and

through its Litigation Trustee ("Plaintiff" or the "Trust"), and as assignee of the rights of the

above-captioned Debtors (the "Debtors"), for its complaint for Avoidance and Recovery of

Preferential Transfers, alleges as follows:

---

[1] The Associated Debtors in these cases were: California Land Company; Friendswood Development Company, LLC; Kings Wood Development Company, L.C.; LandSource Communities Development LLC; LandSource Communities Development Sub LLC; LandSource Holding Company, LLC; Lennar Bressi Ranch Venture, LLC; Lennar Land Partners II; Lennar Mare Island, LLC; Lennar Moorpark, LLC; Lennar Stevenson Holdings, LLC.; LNR-Lennar Washington Square, LLC; LSC Associates, LLC; NWHL GP LLC; The Newhall Land and Farming Company (A California Limited Partnership); The Newhall Land and Farming Company; Southwest Communities Development LLC; Stevenson Ranch Venture LLC; Tournament Players Club at Valencia, LLC; Valencia Corporation; and Valencia Realty Company.

The Parties

1.   On June 8, 2008 (the "Petition Date"), the Debtors commenced their bankruptcy cases by filing voluntary petitions for relief under chapter 11 of title 11, United States Code (the "Bankruptcy Code") in the United States Bankruptcy Court for the District of Delaware (the "Bankruptcy Court").

2.   On July 20, 2009, the Bankruptcy Court entered its order (the "Confirmation Order") confirming the *Second Amended Chapter 11 Joint Plans of Reorganization for Landsource Communities Development LLC and Each of Its Affiliated Debtors* (the "Plan"). The Plan became effective on July 31, 2009 (the "Effective Date").

3.   Pursuant to the terms of the confirmed Plan and the Confirmation Order, on the Effective Date, all avoidance actions were assigned, transferred and conveyed to the Trust along with all rights and authority to pursue and recover on all avoidance actions under the Bankruptcy Code.

4.   Pursuant to the Confirmation Order, as of the Effective Date, KDW Restructuring & Liquidation Services LLC was appointed Litigation Trustee of the Trust.

5.   Defendant R.T. Frankian & Associates, a California corporation (the "Defendant"), was, at all times material hereto, a vendor to or creditor of one or more of the Debtors.

Jurisdiction and Venue

6.   The Bankruptcy Court has jurisdiction over this matter under the Bankruptcy Code and pursuant to 28 U.S.C. § 157(a) and § 1334(a).

7.   Venue in this district is proper pursuant to 28 U.S.C. § 1409(a).

8.   This adversary proceeding is commenced pursuant to Rule 7001(1) of the Federal

Rules of Bankruptcy Procedure and is a core proceeding under 28 U.S.C. §157(b).

First Claim for Relief

(Avoidance of Preferential Transfers -- 11 U.S.C. § 547)

9.   Plaintiff repeats and realleges the allegations in paragraphs 1 through 8 above,

inclusive, as though fully set forth at length.

10.   Within ninety days prior to the Petition Date, one or more of the Debtors made

transfers to or for the benefit of Defendant in the total amount of $94,364.05, as more

specifically described in Exhibit A attached hereto (the "Transfers") and incorporated herein by

this reference.

11.   The Transfers to Defendant were each on account of an antecedent debt owed by

one or more of the Debtors to Defendant before the Transfers were made.

12.   The Transfers were made while the Debtors were insolvent. Pursuant to

11 U.S.C. § 547(f), the Debtors are presumed to be insolvent during the 90 days preceding the

filing of their petitions.

13.   The Transfers to Defendant enabled Defendant to receive more than it would have

received if the Debtors' chapter 11 cases were cases under chapter 7, the Transfers had not been

made, and the Defendant received payment on the debt to the extent provided by Title 11 of the

U.S. Code.

14.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 547 that the

Transfers are avoided.

Second Claim for Relief

(For Recovery Of Property -- 11 U.S.C. § 550)

15.   Plaintiff repeats and realleges the allegations contained in paragraphs 1 through 14 above, inclusive, as though fully set forth herein.

16.   As alleged above, Plaintiff is entitled to avoid the Transfers under 11 U.S.C. § 547. As the Defendant is the initial transferee of the Transfers, Plaintiff is entitled to recover for the estate the proceeds or value of the Transfers under 11 U.S.C. § 550.

17.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 550 that the proceeds or value of the Transfers is recovered for the benefit of the estate.

WHEREFORE, Plaintiff prays for judgment as follows:

1.   For a determination that the Transfers are avoidable as preferential transfers under Section 547 of the Bankruptcy Code, and that Plaintiff is entitled to recover the transfers or their value under Section 550 of the Bankruptcy Code;

2.   For costs of suit incurred herein, including, without limitation, attorneys' fees;

3.   For pre- and post-judgment interest on the judgment amount to the fullest extent allowed by applicable law; and

4.   For such other and further relief as the Court may deem just and proper.

Dated: June 7, 2010

MESSANA ROSNER & STERN LLP

/s/ Frederick B. Rosner

By: Frederick B. Rosner (DE #3995)
Scott J. Leonhardt (DE #4885)
1000 N. West Street, Suite 1200
Wilmington, DE 19801
Telephone: (302) 295-4877
frosner@mrs-law.com

and

KELLEY DRYE & WARREN LLP
Benjamin Blaustein, Esq.
101 Park Avenue
New York, New York 1078
Telephone: (212) 808-7800
Facsimile: (212) 808-7897

Counsel for Plaintiff, the LandSource Creditor
Litigation Liquidating Trust, by and through its
Litigation Trustee

EXHIBIT A

Exhibit A

DEBTOR PAYOR	PAYMENT DATE	PAYMENT NUMBER	PAYMENT AMOUNT	TRANSFEREE
Newhall	3/17/08	145451	$1,800.00	R.T. Frankian
Newhall	3/31/08	145685	$26,759.40	R.T. Frankian
Newhall	3/31/08	145685	$6,168.78	R.T. Frankian
Newhall	3/31/08	145685	$278.00	R.T. Frankian
Newhall	4/7/08	145798	$16,024.50	R.T. Frankian
Newhall	4/7/08	145798	$8,663.20	R.T. Frankian
Newhall	4/7/08	145798	$6,487.19	R.T. Frankian
Newhall	4/7/08	145798	$5,944.50	R.T. Frankian
Newhall	4/7/08	145798	$5,320.42	R.T. Frankian
Newhall	4/7/08	145798	$5,169.90	R.T. Frankian
Newhall	4/7/08	145798	$5,031.60	R.T. Frankian
Newhall	4/7/08	145798	$2,433.35	R.T. Frankian
Newhall	4/7/08	145809	$4,283.21	R.T. Frankian
		TOTAL	$94,364.05	

IN THE UNITED STATES BANKRUPTCY COURT

FOR THE DISTRICT OF DELAWARE

In re: LANDSOURCE COMMUNITIES DEVELOPMENT LLC, *et al.*[1] Debtors.	Chapter 11 Case No. 08-11111 (KJC) (Jointly Administered)
LANDSOURCE CREDITOR LITIGATION LIQUIDATING TRUST, BY AND THROUGH ITS LITIGATION TRUSTEE, Plaintiff, v. DUDEK, a/k/a DUDEK AND ASSOCIATES, INC., Defendant.	Adv. Proc. No. 10-_____ (KJC)

**COMPLAINT FOR AVOIDANCE
AND RECOVERY OF PREFERENTIAL TRANSFERS**

The LandSource Creditor Litigation Liquidating Trust (the "Trust"), by and

through its Litigation Trustee ("Plaintiff" or the "Trust"), and as assignee of the rights of the

above-captioned Debtors (the "Debtors"), for its complaint for Avoidance and Recovery of

Preferential Transfers, alleges as follows:

---

[1] The Associated Debtors in these cases were: California Land Company; Friendswood Development Company, LLC; Kings Wood Development Company, L.C.; LandSource Communities Development LLC; LandSource Communities Development Sub LLC; LandSource Holding Company, LLC; Lennar Bressi Ranch Venture, LLC; Lennar Land Partners II; Lennar Mare Island, LLC; Lennar Moorpark, LLC; Lennar Stevenson Holdings, LLC.; LNR-Lennar Washington Square, LLC; LSC Associates, LLC; NWHL GP LLC; The Newhall Land and Farming Company (A California Limited Partnership); The Newhall Land and Farming Company; Southwest Communities Development LLC; Stevenson Ranch Venture LLC; Tournament Players Club at Valencia, LLC; Valencia Corporation; and Valencia Realty Company.

The Parties

1.   On June 8, 2008 (the "Petition Date"), the Debtors commenced their bankruptcy cases by filing voluntary petitions for relief under chapter 11 of title 11, United States Code (the "Bankruptcy Code") in the United States Bankruptcy Court for the District of Delaware (the "Bankruptcy Court").

2.   On July 20, 2009, the Bankruptcy Court entered its order (the "Confirmation Order") confirming the *Second Amended Chapter 11 Joint Plans of Reorganization for Landsource Communities Development LLC and Each of Its Affiliated Debtors* (the "Plan"). The Plan became effective on July 31, 2009 (the "Effective Date").

3.   Pursuant to the terms of the confirmed Plan and the Confirmation Order, on the Effective Date, all avoidance actions were assigned, transferred and conveyed to the Trust along with all rights and authority to pursue and recover on all avoidance actions under the Bankruptcy Code.

4.   Pursuant to the Confirmation Order, as of the Effective Date, KDW Restructuring & Liquidation Services LLC was appointed Litigation Trustee of the Trust.

5.   Defendant Dudek, a California corporation, also known as Dudek and Associates, Inc. (the "Defendant"), was, at all times material hereto, a vendor to or creditor of one or more of the Debtors.

Jurisdiction and Venue

6.   The Bankruptcy Court has jurisdiction over this matter under the Bankruptcy Code and pursuant to 28 U.S.C. § 157(a) and §1334(a).

7.   Venue in this district is proper pursuant to 28 U.S.C. § 1409(a).

8.   This adversary proceeding is commenced pursuant to Rule 7001(1) of the Federal

Rules of Bankruptcy Procedure and is a core proceeding under 28 U.S.C. §157(b).

First Claim for Relief

(Avoidance of Preferential Transfers -- 11 U.S.C. § 547)

9.   Plaintiff repeats and realleges the allegations in paragraphs 1 through 8 above,

inclusive, as though fully set forth at length.

10.   Within ninety days prior to the Petition Date, one or more of the Debtors made

transfers to or for the benefit of Defendant in the total amount of $864,553.88, as more

specifically described in Exhibit A attached hereto (the "Transfers") and incorporated herein by

this reference.

11.   The Transfers to Defendant were each on account of an antecedent debt owed by

one or more of the Debtors to Defendant before the Transfers were made.

12.   The Transfers were made while the Debtors were insolvent. Pursuant to

11 U.S.C. § 547(f), the Debtors are presumed to be insolvent during the 90 days preceding the

filing of their petitions.

13.   The Transfers to Defendant enabled Defendant to receive more than it would have

received if the Debtors' chapter 11 cases were cases under chapter 7, the Transfers had not been

made, and the Defendant received payment on the debt to the extent provided by Title 11 of the

U.S. Code.

14.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 547 that the

Transfers are avoided.

Second Claim for Relief

(For Recovery Of Property -- 11 U.S.C. § 550)

15. Plaintiff repeats and realleges the allegations contained in paragraphs 1 through 14 above, inclusive, as though fully set forth herein.

16. As alleged above, Plaintiff is entitled to avoid the Transfers under 11 U.S.C. § 547. As the Defendant is the initial transferee of the Transfers, Plaintiff is entitled to recover for the estate the proceeds or value of the Transfers under 11 U.S.C. § 550.

17. Plaintiff is entitled to an order and judgment under 11 U.S.C. § 550 that the proceeds or value of the Transfers is recovered for the benefit of the estate.

WHEREFORE, Plaintiff prays for judgment as follows:

1. For a determination that the Transfers are avoidable as preferential transfers under Section 547 of the Bankruptcy Code, and that Plaintiff is entitled to recover the transfers or their value under Section 550 of the Bankruptcy Code;

2. For costs of suit incurred herein, including, without limitation, attorneys' fees;

3. For pre- and post-judgment interest on the judgment amount to the fullest extent allowed by applicable law; and

4. For such other and further relief as the Court may deem just and proper.

Dated: June 2, 2010

PACHULSKI STANG ZIEHL & JONES LLP

/s/ Kathleen P. Makowski
Laura Davis Jones (Bar No. 2436)
Kathleen P. Makowski (Bar No. 3648)
Steven J. Kahn (CA Bar No. 076933)
919 North Market Street, 17th Floor
P.O. Box 8705
Wilmington, DE 19899-8705 (Courier No. 19801)
Telephone: (302) 652-4100
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          kmakowski@pszjlaw.com
          skahn@pszjlaw.com

Counsel for Plaintiff, the LandSource Creditor
Litigation Liquidating Trust, by and through its
Litigation Trustee

Exhibit A

DEBTOR/PAYOR	PAYMENT DATE	PAYMENT NUMBER	PAYMENT AMOUNT	TRANSFEREE
Newhall	3/10/2008	145206	$1,611.82	DUDEK
Newhall	3/17/2008	145284	$9,922.13	DUDEK
Newhall	3/17/2008	145284	$2,670.72	DUDEK
Newhall	3/17/2008	145284	$831.25	DUDEK
Newhall	3/17/2008	145284	$413.25	DUDEK
Newhall	3/17/2008	145284	$399.00	DUDEK
Newhall	3/17/2008	145284	$204.25	DUDEK
Newhall	3/17/2008	145284	$90.26	DUDEK
Newhall	3/17/2008	145284	$3.54	DUDEK
Newhall	3/17/2008	145328	$3,956.75	DUDEK
Newhall	3/17/2008	145328	$1,387.00	DUDEK
Newhall	3/17/2008	145389	$3,067.62	DUDEK
Newhall	3/17/2008	145389	$1,900.00	DUDEK
Newhall	3/17/2008	145389	$798.00	DUDEK
Newhall	3/17/2008	145389	$240.83	DUDEK
Newhall	3/31/2008	145690	$79,240.75	DUDEK
Newhall	3/31/2008	145690	$6,872.08	DUDEK
Newhall	3/31/2008	145690	$6,284.25	DUDEK
Newhall	3/31/2008	145690	$1,657.20	DUDEK
Newhall	4/7/2008	145699	$147,581.40	DUDEK
Newhall	4/7/2008	145699	$36,880.23	DUDEK
Newhall	4/7/2008	145699	$27,231.79	DUDEK
Newhall	4/7/2008	145699	$15,869.80	DUDEK
Newhall	4/7/2008	145699	$12,677.52	DUDEK
Newhall	4/7/2008	145699	$11,181.51	DUDEK
Newhall	4/7/2008	145699	$10,375.48	DUDEK
Newhall	4/7/2008	145699	$9,180.00	DUDEK
Newhall	4/7/2008	145699	$8,730.00	DUDEK
Newhall	4/7/2008	145699	$6,923.78	DUDEK
Newhall	4/7/2008	145699	$5,570.75	DUDEK
Newhall	4/7/2008	145699	$3,855.83	DUDEK
Newhall	4/7/2008	145699	$2,204.00	DUDEK
Newhall	4/7/2008	145699	$1,018.89	DUDEK
Newhall	4/7/2008	145699	$845.50	DUDEK

DEBTOR/PAYOR	PAYMENT DATE	PAYMENT NUMBER	PAYMENT AMOUNT	TRANSFEREE
Newhall	4/7/2008	145699	$705.38	DUDEK
Newhall	4/7/2008	145699	$586.62	DUDEK
Newhall	4/7/2008	145699	$342.00	DUDEK
Newhall	4/7/2008	145699	$131.46	DUDEK
Newhall	4/7/2008	145805	$15,993.64	DUDEK
Newhall	4/7/2008	145805	$3,918.57	DUDEK
Newhall	4/7/2008	145805	$3,645.29	DUDEK
Newhall	4/7/2008	145805	$3,441.38	DUDEK
Newhall	4/7/2008	145805	$3,002.32	DUDEK
Newhall	4/7/2008	145805	$2,004.51	DUDEK
Newhall	4/7/2008	145805	$1,381.78	DUDEK
Newhall	4/7/2008	145805	$688.75	DUDEK
Newhall	4/7/2008	145805	$683.49	DUDEK
Newhall	4/7/2008	145805	$581.44	DUDEK
Newhall	4/7/2008	145805	$451.25	DUDEK
Newhall	4/7/2008	145805	$277.15	DUDEK
Newhall	4/7/2008	145805	$194.62	DUDEK
Newhall	4/7/2008	145805	$19.12	DUDEK
Newhall	4/7/2008	145805	$15.66	DUDEK
Newhall	4/7/2008	145805	$10.61	DUDEK
Newhall	4/7/2008	145805	$8.73	DUDEK
Newhall	4/28/2008	146151	$164,821.41	DUDEK
Newhall	5/5/2008	146403	$58,349.05	DUDEK
Newhall	5/5/2008	146403	$23,367.65	DUDEK
Newhall	5/5/2008	146403	$20,128.11	DUDEK
Newhall	5/5/2008	146403	$6,882.76	DUDEK
Newhall	5/5/2008	146403	$4,057.57	DUDEK
Newhall	5/5/2008	146403	$3,465.13	DUDEK
Newhall	5/5/2008	146403	$2,964.00	DUDEK
Newhall	5/5/2008	146403	$2,892.75	DUDEK
Newhall	5/5/2008	146403	$2,812.00	DUDEK
Newhall	5/5/2008	146403	$2,594.73	DUDEK
Newhall	5/5/2008	146403	$1,729.00	DUDEK
Newhall	5/5/2008	146403	$1,125.77	DUDEK
Newhall	5/5/2008	146403	$833.72	DUDEK
Newhall	5/5/2008	146403	$380.00	DUDEK
Newhall	5/5/2008	146403	$285.13	DUDEK
Newhall	5/5/2008	146403	$199.50	DUDEK

DEBTOR/PAYOR	PAYMENT DATE	PAYMENT NUMBER	PAYMENT AMOUNT	TRANSFEREE
Newhall	5/5/2008	146403	$190.00	DUDEK
Newhall	5/5/2008	146403	$148.44	DUDEK
Newhall	5/5/2008	146470	$2,744.93	DUDEK
Newhall	5/5/2008	146470	$1,458.25	DUDEK
Newhall	5/5/2008	146470	$142.51	DUDEK
Newhall	5/12/2008	146574	$30,039.08	DUDEK
Newhall	5/12/2008	146574	$22,047.15	DUDEK
Newhall	5/12/2008	146574	$15,450.00	DUDEK
Newhall	5/12/2008	146604	$35,384.29	DUDEK
Newhall	5/12/2008	146604	$300.00	DUDEK

IN THE UNITED STATES BANKRUPTCY COURT

FOR THE DISTRICT OF DELAWARE

In re: LANDSOURCE COMMUNITIES DEVELOPMENT LLC, *et al.*[1] Debtors.	Chapter 11 Case No. 08-11111 (KJC) (Jointly Administered)
LANDSOURCE CREDITOR LITIGATION LIQUIDATING TRUST, BY AND THROUGH ITS LITIGATION TRUSTEE, Plaintiff, v. COMPLIANCE BIOLOGY, INC., Defendant.	Adv. Proc. No. 10-_____ (KJC)

**COMPLAINT FOR AVOIDANCE
AND RECOVERY OF PREFERENTIAL TRANSFERS**

The LandSource Creditor Litigation Liquidating Trust (the "Trust"), by and

through its Litigation Trustee ("Plaintiff" or the "Trust"), and as assignee of the rights of the

above-captioned Debtors (the "Debtors"), for its complaint for Avoidance and Recovery of

Preferential Transfers, alleges as follows:

---

[1] The Associated Debtors in these cases were: California Land Company; Friendswood Development Company, LLC; Kings Wood Development Company, L.C.; LandSource Communities Development LLC; LandSource Communities Development Sub LLC; LandSource Holding Company, LLC; Lennar Bressi Ranch Venture, LLC; Lennar Land Partners II; Lennar Mare Island, LLC; Lennar Moorpark, LLC; Lennar Stevenson Holdings, LLC.; LNR-Lennar Washington Square, LLC; LSC Associates, LLC; NWHL GP LLC; The Newhall Land and Farming Company (A California Limited Partnership); The Newhall Land and Farming Company; Southwest Communities Development LLC; Stevenson Ranch Venture LLC; Tournament Players Club at Valencia, LLC; Valencia Corporation; and Valencia Realty Company.

The Parties

1.   On June 8, 2008 (the "Petition Date"), the Debtors commenced their bankruptcy cases by filing voluntary petitions for relief under chapter 11 of title 11, United States Code (the "Bankruptcy Code") in the United States Bankruptcy Court for the District of Delaware (the "Bankruptcy Court").

2.   On July 20, 2009, the Bankruptcy Court entered its order (the "Confirmation Order") confirming the *Second Amended Chapter 11 Joint Plans of Reorganization for Landsource Communities Development LLC and Each of Its Affiliated Debtors* (the "Plan"). The Plan became effective on July 31, 2009 (the "Effective Date").

3.   Pursuant to the terms of the confirmed Plan and the Confirmation Order, on the Effective Date, all avoidance actions were assigned, transferred and conveyed to the Trust along with all rights and authority to pursue and recover on all avoidance actions under the Bankruptcy Code.

4.   Pursuant to the Confirmation Order, as of the Effective Date, KDW Restructuring & Liquidation Services LLC was appointed Litigation Trustee of the Trust.

5.   Defendant Compliance Biology, Inc., a California corporation (the "Defendant"), was, at all times material hereto, a vendor to or creditor of one or more of the Debtors.

Jurisdiction and Venue

6.   The Bankruptcy Court has jurisdiction over this matter under the Bankruptcy Code and pursuant to 28 U.S.C. § 157(a) and §1334(a).

7.   Venue in this district is proper pursuant to 28 U.S.C. § 1409(a).

8.   This adversary proceeding is commenced pursuant to Rule 7001(1) of the Federal

Rules of Bankruptcy Procedure and is a core proceeding under 28 U.S.C. §157(b).

First Claim for Relief

(Avoidance of Preferential Transfers -- 11 U.S.C. § 547)

9.   Plaintiff repeats and realleges the allegations in paragraphs 1 through 8 above, inclusive, as though fully set forth at length.

10.   Within ninety days prior to the Petition Date, one or more of the Debtors made transfers to or for the benefit of Defendant in the total amount of $41,300.00, as more specifically described in Exhibit A attached hereto (the "Transfers") and incorporated herein by this reference.

11.   The Transfers to Defendant were each on account of an antecedent debt owed by one or more of the Debtors to Defendant before the Transfers were made.

12.   The Transfers were made while the Debtors were insolvent. Pursuant to 11 U.S.C. § 547(f), the Debtors are presumed to be insolvent during the 90 days preceding the filing of their petitions.

13.   The Transfers to Defendant enabled Defendant to receive more than it would have received if the Debtors' chapter 11 cases were cases under chapter 7, the Transfers had not been made, and the Defendant received payment on the debt to the extent provided by Title 11 of the U.S. Code.

14.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 547 that the Transfers are avoided.

Second Claim for Relief

(For Recovery Of Property -- 11 U.S.C. § 550)

15.   Plaintiff repeats and realleges the allegations contained in paragraphs 1 through 14 above, inclusive, as though fully set forth herein.

16.   As alleged above, Plaintiff is entitled to avoid the Transfers under 11 U.S.C. § 547. As the Defendant is the initial transferee of the Transfers, Plaintiff is entitled to recover for the estate the proceeds or value of the Transfers under 11 U.S.C. § 550.

17.   Plaintiff is entitled to an order and judgment under 11 U.S.C. § 550 that the proceeds or value of the Transfers is recovered for the benefit of the estate.

WHEREFORE, Plaintiff prays for judgment as follows:

1.   For a determination that the Transfers are avoidable as preferential transfers under Section 547 of the Bankruptcy Code, and that Plaintiff is entitled to recover the transfers or their value under Section 550 of the Bankruptcy Code;

2.   For costs of suit incurred herein, including, without limitation, attorneys' fees;

3.   For pre- and post-judgment interest on the judgment amount to the fullest extent allowed by applicable law; and

4.   For such other and further relief as the Court may deem just and proper.

Dated: June 1, 2010

PACHULSKI STANG ZIEHL & JONES LLP

<u>/s/ Kathleen P. Makowski</u>
Laura Davis Jones (Bar No. 2436)
Kathleen P. Makowski (Bar No. 3648)
Steven J. Kahn (CA Bar No. 076933)
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        kmakowski@pszjlaw.com
        skahn@pszjlaw.com

Counsel for Plaintiff, the LandSource Creditor
Litigation Liquidating Trust, by and through its
Litigation Trustee

Exhibit A

DEBTOR/PAYOR	PAYMENT DATE	PAYMENT NUMBER	PAYMENT AMOUNT	TRANSFEREE
Newhall	3/17/2008	145324	$1,710.00	COMPLIANCE BIOLOGY, INC
Newhall	3/17/2008	145324	$950.00	COMPLIANCE BIOLOGY, INC
Newhall	3/17/2008	145463	$600.00	COMPLIANCE BIOLOGY, INC
Newhall	4/21/2008	146118	$630.00	COMPLIANCE BIOLOGY, INC
Newhall	4/28/2008	146180	$27,780.00	COMPLIANCE BIOLOGY, INC
Newhall	5/5/2008	146401	$7,260.00	COMPLIANCE BIOLOGY, INC
Newhall	5/5/2008	146467	$1,035.00	COMPLIANCE BIOLOGY, INC
Newhall	5/5/2008	146490	$840.00	COMPLIANCE BIOLOGY, INC
Newhall	5/5/2008	146490	$495.00	COMPLIANCE BIOLOGY, INC

5. The DEIR states that the Nickel water is "readily available. The document should state that though the Nickel water does constitute a source of supply, its delivery is contingent on execution of agreements with CLWA and, through CLWA, with DWR.

6. The DEIR lists the Agency's imported supplies as consisting solely of State Water Project (SWP) water (page 3.13-51) when, in fact, there are other sources of imported water that comprise the Agency's supply portfolio. These non-SWP waters include Yuba Accord water and the water acquisition from the Buena Vista and Rosedale Rio-Bravo Water Storage Districts.

7. The information related to perchlorate remediation should be updated to reflect that the start-up and monitoring of the perchlorate treatment facility will begin in November 2009 (page 3.13-101).

CLWA appreciates the efforts of the County and the City on the plan update and the DEIR and looks forward to your responses to our comments. If you have any questions, please contact Jeff Ford, Water Resources Planner, at (661) 513-1281, or by e-mail at jford@clwa.org.

Sincerely,

Dan Masnada
General Manager

cc: Russ Behrens, McCormack, Kidman and Behrens
Steve Cole, Newhall County Water District
Robert DiPrimio, Valencia Water Company
Mauricio Guardado, Santa Clarita Water Company
David Rydman, LA County Waterworks District #36
Jason Smisko, Senior Planner, City of Santa Clarita

These BOs restrict flow rates on various watercourses that convey water to the State Water Project (SWP) export facilities in the Delta, resulting in additional restrictions on SWP pumping.

Although the restrictions on SWP exports from the Delta that are included in the BOs are currently in effect, the California Department of Water Resources (DWR) has not issued formal guidance regarding how these BOs will affect the reliability of SWP supplies. Such guidance would normally be forthcoming in an update to DWR's 2007 State Water Project Delivery Reliability Report (Reliability Report). Pending a revision of the Reliability Report by DWR, there is uncertainty in regards to the SWP Table A supply amounts in the various hydrology scenarios used to determine overall water supply adequacy. The quantities used in the DEIR for SWP supplies, while correct at the time they were generated, need to be updated to reflect the most recent actions by the courts and regulatory agencies.

Therefore, the use of that data as part of the DEIR analysis to conclude that there are adequate supplies to support the buildout of the OVOV should not be used and conclusions should be drawn from a future estimate of overall water supplies prepared using an updated Reliability Report for the SWP supply component. The updated Reliability Report is anticipated by yearend 2009. Once it is available, CLWA will need some time to evaluate the changes to supply, and will then submit those adjusted supply figures to the Regional Planning staff.

2. The Agency letter to the City and County (page 3.13-62) cited as supporting documentation, is outdated as it was written prior to the issuance of the two recent BOs described above and has been superseded by more recent regulatory actions and judicial decisions affecting SWP water supplies. Accordingly, the Agency and the local retailers will be submitting an updated letter to the County Regional Planning Department and the City of Santa Clarita shortly.

3. The DEIR does not fully explain and document the water supply demand factors used to determine the total required supply at the time of buildout of the OVOV Plan. Additionally, the DEIR should state which sources were used to determine the factors and all of the assumptions used in the demand calculation. Determination of the expected impacts of the project is problematic without a sufficiently described methodology for anticipated water demand being available for review.

4. The court case of California Water Impact Network vs. CLWA over the water acquisition from the Buena Vista Water District/Rosedale Rio-Bravo Water District (page 3.13-15) has been resolved. On April 20, 2009, the Second District Court of Appeal issued an unpublished opinion affirming the judgment denying the mandate petition (Case No.B205622).

October 28, 2009

Mr. Mitch Glaser
Los Angeles County
Department of Regional Planning
320 West Temple Street
Los Angeles, California 90012

**CASTAIC
LAKE**
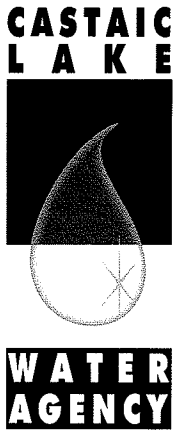
**WATER
AGENCY**

Re: Castaic Lake Water Agency Comments on the One Valley One Vision, Draft
       Environmental Impact Report

BOARD OF DIRECTOR

PRESIDENT
R. J. KELLY

Dear Mr. Glaser:

VICE PRESIDENT
PETER KAVOUNAS

The Castaic Lake Water Agency (CLWA) is the provider of imported water to the
Santa Clarita Valley. The CLWA service area covers the proposed project area and
the determination of water demand and availability for the area is addressed in the
2005 Santa Clarita Valley Urban Water Management Plan prepared by CLWA and
the local water retailers. As such, CLWA has an interest in Valley water issues and
submits this letter in response to the Draft Environmental Impact Report (DEIR).

E.G. "JERRY" GLADBACH
ROBERT J. DiPRIMIO
DEAN D. EFSTATHIOU
WILLIAM C. COOPER
WILLIAM PECSI
THOMAS P. CAMPBELL

The proposed project is an update of the County of Los Angeles Santa Clarita Valley
Area Plan, a component of the One Valley One Vision (OVOV), a joint planning effort
with the City of Santa Clarita. The DEIR analyzes the impacts from the proposed
plan updates, including those anticipated impacts in the Water Service category. The
Water Service analysis in the DEIR emphasizes water use over the next twenty years
(through 2030) in the Santa Clarita Valley. The analysis states the proposed buildout
of the OVOV Planning Area would generate a total water demand of 125,400 acre-
feet per year (afy) in 2030 (normal hydrology) with ten percent water conservation.
Based on the information presented the DEIR, it also includes a conclusion that an
adequate supply of water would be available to serve the OVOV Planning Area at its
proposed buildout population of 443,000.

EDWARD A. COLLEY
JACQUELYN H. McMILLAN
B. J. ATKINS

GENERAL MANAGER
DAN MASNADA

GENERAL COUNSEL
McCORMICK, KIDMAN &
BEHRENS, LLP

CLWA is supportive of the efforts to update the plans and submits the following
comments on the Water Service Section (Section 3-13) of the DEIR and its
supporting documentation:

SECRETARY
APRIL JACOBS

Water Resources

1. The analysis in the Water Resources Section does not incorporate the
    water supply impacts of recently issued regulatory actions affecting
    imported water supply. As a result, the conclusion that there is a less-
    than-significant impact may be premature. CLWA's State Water Project
    supplies have been affected by a pair of Biological Opinions (BOs) issued
    by regulatory agencies to comply with the federal Endangered Species
    Act.

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EVALUATING SUSTAINABILITY OF PROJECTED WATER DEMANDS UNDER FUTURE CLIMATE CHANGE SCENARIOS

July 2010

TETRA TECH

Evaluating Sustainability of Projected Water Demands Under Future Climate Change Scenarios

July 2010

Sujoy B. Roy[1], Limin Chen[1], Evan Girvetz[2], Edwin P. Maurer[3], William B. Mills[1], and Thomas M. Grieb[1]

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Executive Summary

Climate change will impact water supplies, exacerbating existing pressures on water resources caused by population and economic growth. Given the combination of these stressors, the sustainability of water resources in future decades is a concern in many parts of the world. This study presents an integration of water withdrawal projections and future estimates of renewable water supply across the United States to assess future water availability in the face of a changing climate. The water demand projections in this work are based on business-as-usual trends in growth, particularly of population and energy demand, and renewable water supply projections are based on the average results of an ensemble of sixteen established climate models. The analysis is performed using annual water use data at the U.S. county level, and using global climate model outputs for temperature and precipitation, both projected 20-40 years into the future. The analysis provides a national-scale evaluation of the results of changing water demand and supply, and helps identify regions that are most susceptible to climate change.

As part of this analysis, a water supply sustainiability index comprised of five attributes of water use

and growth was developed, and used to compare impacts across regions. We found that, under the business-as-usual scenario of demand growth, water supplies in 70% of counties in the U.S. may be at risk to climate change, and approximately one-third of counties may be at high or extreme risk. The geographic extent of potential risk to water supplies is greatly increased when climate change is considered (Figure ES-1). This calculation indicates the increase in risk that affected counties face that water demand will outstrip supplies, if no other remedial actions are taken. To be clear, it is not intended as a prediction that water shortages will occur, but rather where they are more likely to occur. As a result, the pressure on public officials and water users to creatively manage demand and supply—through greater efficiency and realignment among competing uses, and by water recycling and creation of new supplies through treatment—will be greatest in these regions. In addition to developing national-scale maps of potential climate impacts, this work serves as a starting point for more detailed analysis, either at more local scales, or by consideration of specific sectors of the economy that are directly dependent on sustainable water resources.
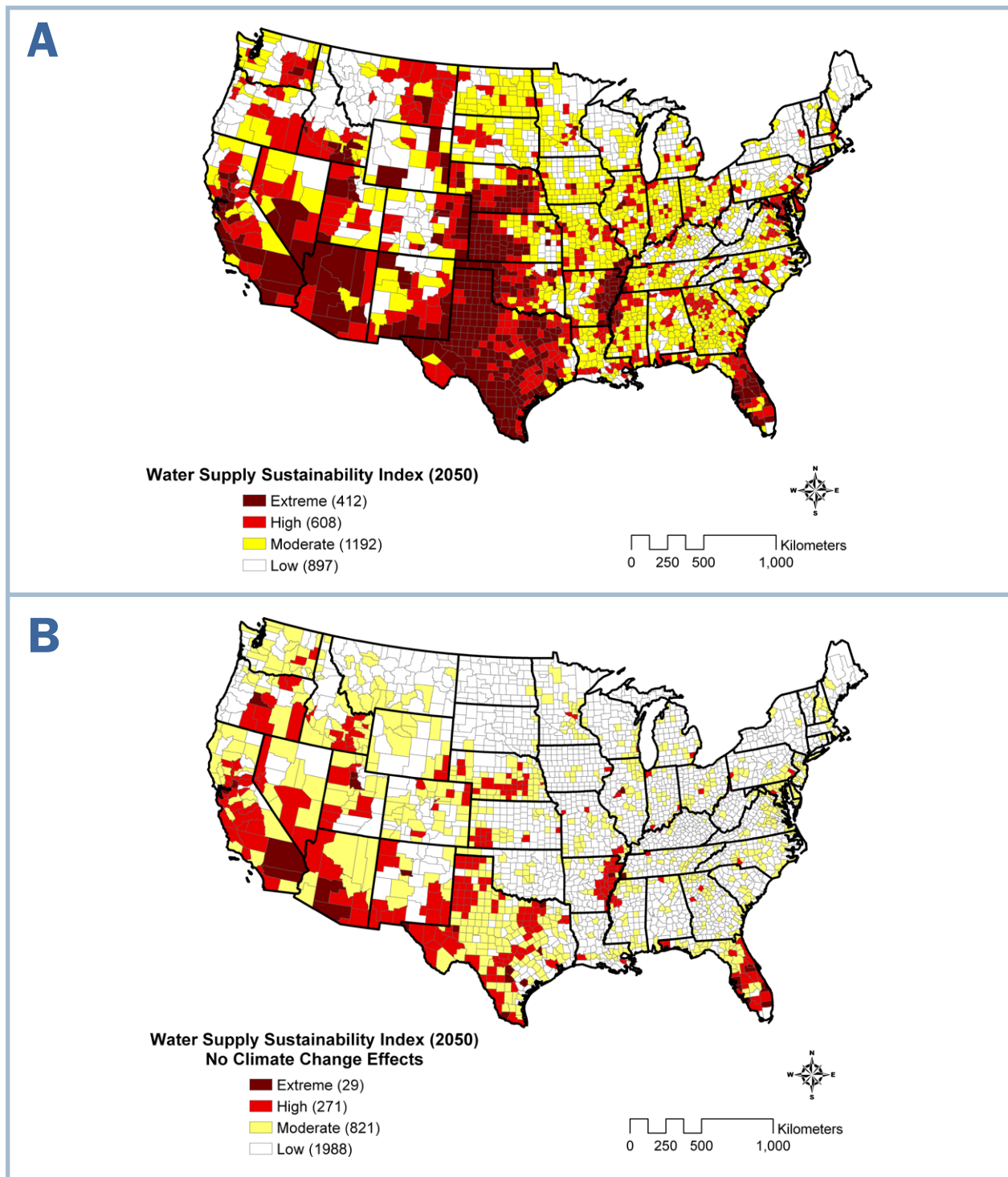
Figure ES-1. Water Supply Sustainability Index in 2050, (a) with available precipitation computed using projected climate change, and (b) with available precipitation corresponding to 20th century conditions, i.e., 1934-2000. The risks to water sustainability are classified into four categories from Extreme to Low. The numbers in parentheses are the numbers of counties in each category.

Introduction

Human needs for water continue to grow with increasing population, primarily for direct consumption, but also secondarily for energy production, and agricultural, commercial, and industrial activities. The sustainability of water resources, defined as the maintenance of natural water resources in adequate quantity and with suitable quality for human use and for aquatic ecosystems, is adversely impacted by these increasing demands. Over the coming decades, climate change, caused by the buildup of heat-trapping greenhouse gases in the atmosphere, is expected to be another stressor on water resources. Climate change impacts on water resources through changing precipitation, snowmelt, and other processes related to warming temperature, have been identified in previous work (Gleick, 1989; Hurd et al., 1999; Jacobs et al., 2001; Bates et al., 2008; Brekke et al., 2009a). For example, as temperatures increase, more water is evaporated, and less runs off into rivers and reservoirs. Previous work has identified areas of the globe where atmosphere-ocean general circulation models (AOGCMs or GCMs, also known as "global climate models") project changes in temperature and precipitation as a result of changing concentrations of heat trapping greenhouse gases in the atmosphere (Christensen et al., 2007; Intergovernmental Panel on Climate Change, IPCC, 2007). Projected future precipitation changes are variable over regional scales. Unlike temperature—which all climate models agree will increase—precipitation is projected to both increase and decrease across different regions over the 21st century. However, even in the face of increased precipitation due to climate change, water available for human use for many areas may not change or even decrease due to increased temperatures resulting in greater evapotranspiration. Synthesis reports for the United States have also been prepared that provide an overview of the hydrologic changes that might be

expected due to climate change, which include continuing increases in extreme precipitation, intensification of droughts, acceleration of snowmelt, increased evaporation, and other effects, resulting in impacts to infrastructure, water availability, and aquatic ecosystems (National Science and Technology Council, 2008; Brekke et al., 2009a; U.S. Global Change Research Program, 2009). This study adds to this general body of knowledge by providing quantitative and region-specific information on the impacts of climate change to water availability and to future water supplies versus projections of demand across the United States.

This work is an analysis of future business-as-usual water demand as it relates to renewable water availability at the national scale across the United States, under scenarios that consider potential changes in precipitation and temperature in 2030 and 2050 as projected by GCMs. The extent of climate change over this time frame is less severe than end-of-21st century projections, however, this time frame was chosen because it is within the time horizon of most major infrastructure planning activities, especially infrastructure related to water resources and energy production (e.g., Brekke, et al., 2009b). Although there is a time lag between greenhouse gas emissions and climate change impacts, this is also within the time horizon of emissions reductions being proposed in the United States and internationally.

For the purpose of this analysis, we project future water withdrawals under scenarios of continued population growth and associated municipal/domestic water, electricity and cooling water demands, focusing on freshwater withdrawals from groundwater and surface water sources. Water demand projections are based on five-yearly water use surveys reported by the U.S. Geological Survey, most recently for 2005 (USGS; Kenney et al., 2009). Population projections are based on Cen-

sus Bureau estimates (U.S. Census Bureau, 2008), and electricity production estimates are from the Department of Energy (EIA, 2009). Using these values, and making assumptions on water use per capita and water use per unit of electricity generated, we estimate future water demand growth as a result of additional domestic supply and electricity generation. Future water demand projected using this approach is a business-as-usual type of scenario, and does not specifically represent future enhancements in water use efficiency in these sectors, and does not consider changes in the rates of use that might be related to climate change. Thus, future thermoelectric cooling demand is based on water use rates typical of generating plants being developed today, and future municipal demand is based on per capita water use rates in 2005 combined with future populations. The goal of such an analysis is to represent future conditions that might be expected if water use practices continue along their present trajectory. This is a somewhat artificial scenario, in that water use efficiency is not static and has continued to improve; the needs of a larger population and economy are being met mostly through total withdrawals at national aggregate levels that have remained flat over past two decades, although there are regions where withdrawals are higher and others where they are lower over this period. However, by highlighting discrepancies between potential future demand and future supply using the business-as-usual scenario, we focus attention on areas where there are likely to be the greatest pressures to improve management of surface water and groundwater resources. This could occur by management of demand growth, realignment in water use among competing uses, greater water recycling, and creation of new supplies through treatment. The past paradigm where new demands could be simply met by greater withdrawals from natural systems, with no consideration of impacts to sustainability, is unlikely to be considered as plausible in water resources development in most regions (Gleick, 1998).

Projected future withdrawals are related to a simple measure of renewable water production, or "available precipitation," which is calculated under current and future temperature and precipitation scenarios (Roy et al., 2005). In a given region, precipitation as rain or snow is the main source of

renewable water. Some of the precipitation is lost to the atmosphere by evaporation or through transpiration by plants (these two processes are usually lumped together and termed evapotranspiration). The remainder percolates into the ground and is stored as groundwater or moves as runoff into surface water bodies. For the purpose of this analysis, we consider that precipitation that is not lost to evapotranspiration (termed available precipitation) can be used for other purposes, and is an approximate measure of available renewable water in a region. We calculate this as the precipitation minus potential evapotranspiration (PET) for each month, and then sum the net values for the entire year. For months where the PET exceeds precipitation, the net addition to the available water for that month is zero, to avoid counting unavailable water. PET can be thought of as an index that corresponds to the maximum evapotranspirative loss that might occur from land; in this work it is computed using a relatively simple method that can be applied over current and future conditions and across broad geographic scales.

Relating future demand and available precipitation provides an initial estimate of water supply sustainability across the nation—resolved at the county-level, the best available resolution for water use information—and helps identify areas most likely to be affected by climate change (Roy et al. 2004, 2005). Although the maps produced in this work display significant local-scale complexity, the underlying analysis is intended to be relatively simple and provide a basis for more focused regional studies where appropriate. This document summarizes the assumptions associated with the analysis relating to water demand projections, future climate, and water availability, and presents the results as a series of maps.

The remainder of this report is organized in the following manner. We first present the key elements of the methodology used, including the estimation of water demand in the future, climate projections from GCMs, the estimation of available precipitation, and the development of an index to composite multiple facets of water use. We then present the results as a series of maps for 2050, followed by the principal conclusions of this work. An appendix includes a set of maps for 2030.

Methodology

Water Use Data in the United States

The most comprehensive data on water use in the U.S. are collected every five years by the USGS as part of the National Water Use Information Program. These surveys were first conducted in 1950, and the most recent survey that is available is for 2005 (Kenny et al., 2009). This data gathering effort generally obtains information on surface water and groundwater withdrawals and consumptive use, and identifies use by six major categories: public and domestic water supply, commercial, industrial, mining, irrigation, and thermoelectric cooling for electric generation (including fossil-fuel and nuclear power generation). The type of water withdrawn, either fresh water or saline water, and the source, either surface or groundwater, is also reported. The most recent water use surveys also estimated livestock and aquaculture use, although these are relatively minor. In the terminology of the USGS, all these uses these are termed "offstream" uses, as opposed to "instream" uses for hydroelectric power generation (USGS, 1998). Instream uses for non-human, environmental purposes, such as flows for maintaining aquatic ecosystems, are not cataloged by the USGS. This analysis is primarily focused on offstream freshwater use.

On a national aggregate basis, Figure 1(a) shows the offstream withdrawal of freshwater for each of the major categories described above for the 2005 water use survey, as well as the trends in total freshwater withdrawal from 1950-2005 (Figure 1b). Electric generation, specifically thermoelectric cooling water and irrigation withdrawals are the dominant components of the total fresh water withdrawal nationwide (40% and 36%, respectively), followed by public and domestic water supply (14%). Although thermoelectric cooling use is a major fraction of the withdrawal, most of this use is not consumptive. In the 1995 water use survey, for example (USGS, 1998), where consumptive use was last reported, thermoelectric cooling was a relatively modest fraction of the total consumptive use (3%), and irrigation the most significant consumptive user of water (82%). Trends in freshwater withdrawal from surface and
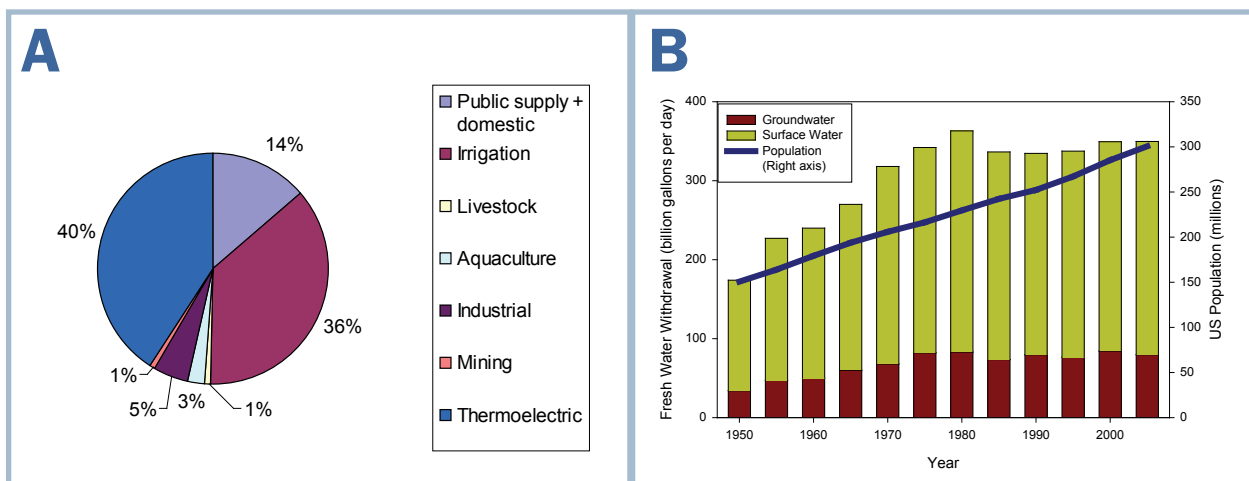
Figure 1. (a) Water use by sectors in 2005 (Source: Kenny et al., 2009), and (b) trends in total freshwater withdrawal (1950-2005).

groundwater sources provide interesting insight into the future development of water resources in the United States (Figure 1b): as population has continued to grow, total water withdrawals have remained relatively flat. The two sectors using the most water, thermoelectric generation and agriculture, have both increased their efficiency of water use over the last two to three decades, such that increased electricity generation and food production have been obtained without the use of additional water supplies. Water used instream for hydroelectric generation is not considered in this analysis and is assumed to not directly affect offstream uses.

The 2005 water use survey data at the county level (Kenny et al., 2009) forms the baseline for this analysis. Total freshwater withdrawals reported in the 2005 survey are shown in Figure 2 where the volumes of freshwater withdrawn are normalized to the county area and shown in inches per year. The withdrawals associated with thermoelectric cooling and irrigation are shown in Figure 3. There

are clear geographic variations in the major sectors associated with freshwater withdrawal: irrigation withdrawals occur largely in the western states, whereas large thermoelectric withdrawals are in the eastern states and clustered near the major rivers, such as the Ohio and Mississippi River basins, and the Great Lakes. These data are shown in the units reported by USGS, i.e., in million gallons per day or mgd, for each county.

Water Demand in 2030 and 2050

Any projection of future use is based on assumptions in the growth or decrease in demand in each of the major sectors of water use, which depend on uncertain demographic and economic forces. For the purpose of this analysis, as noted above, business-as-usual projections of future water demand were made. It was further assumed that growth occurs only for domestic supply and for thermoelectric cooling. Water use for irrigation, livestock, aquaculture and mining was assumed to remain at the same levels as in 2005.
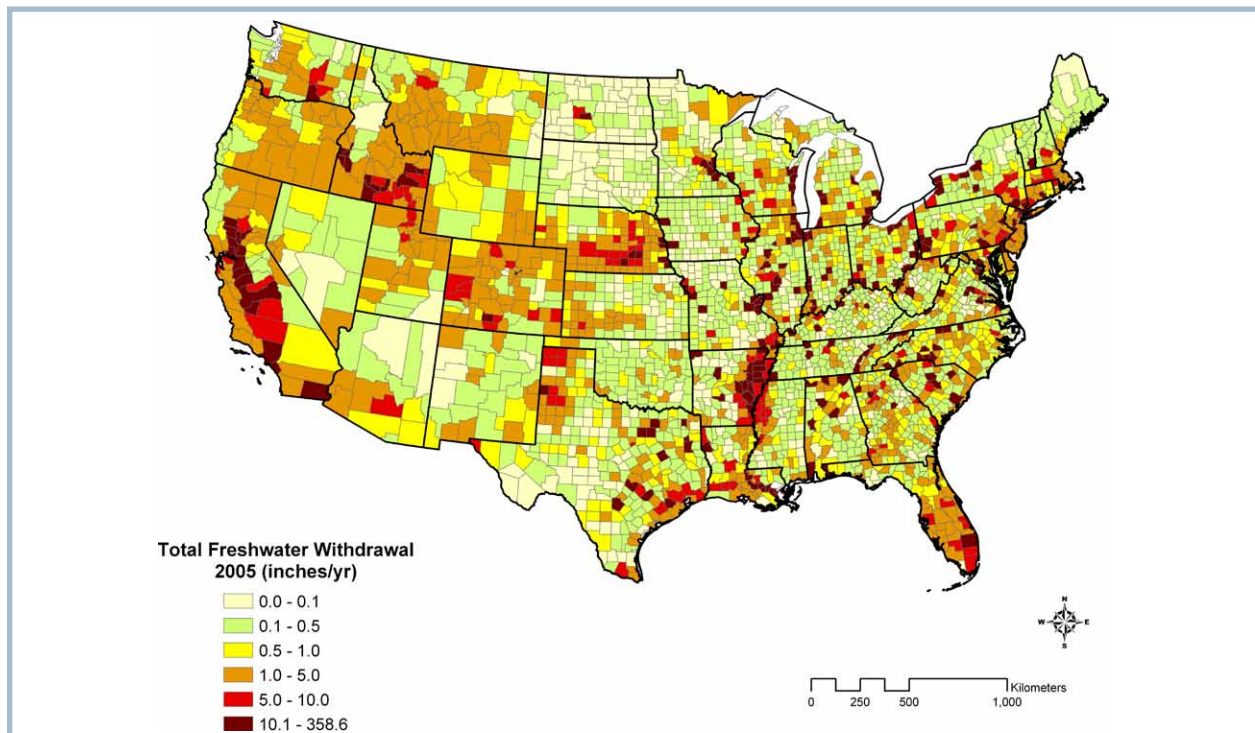
Figure 2. Total freshwater withdrawal in 2005 at the county level (Kenny et al., 2009). The specific sectors considered in the USGS water use survey include thermoelectric cooling, irrigation, public supply, industrial, commercial, livestock, aquaculture, and mining water use. Total volumes of water withdrawal in mgd are normalized to county area and reported in inches for direct comparison with precipitation and related climatic variables.
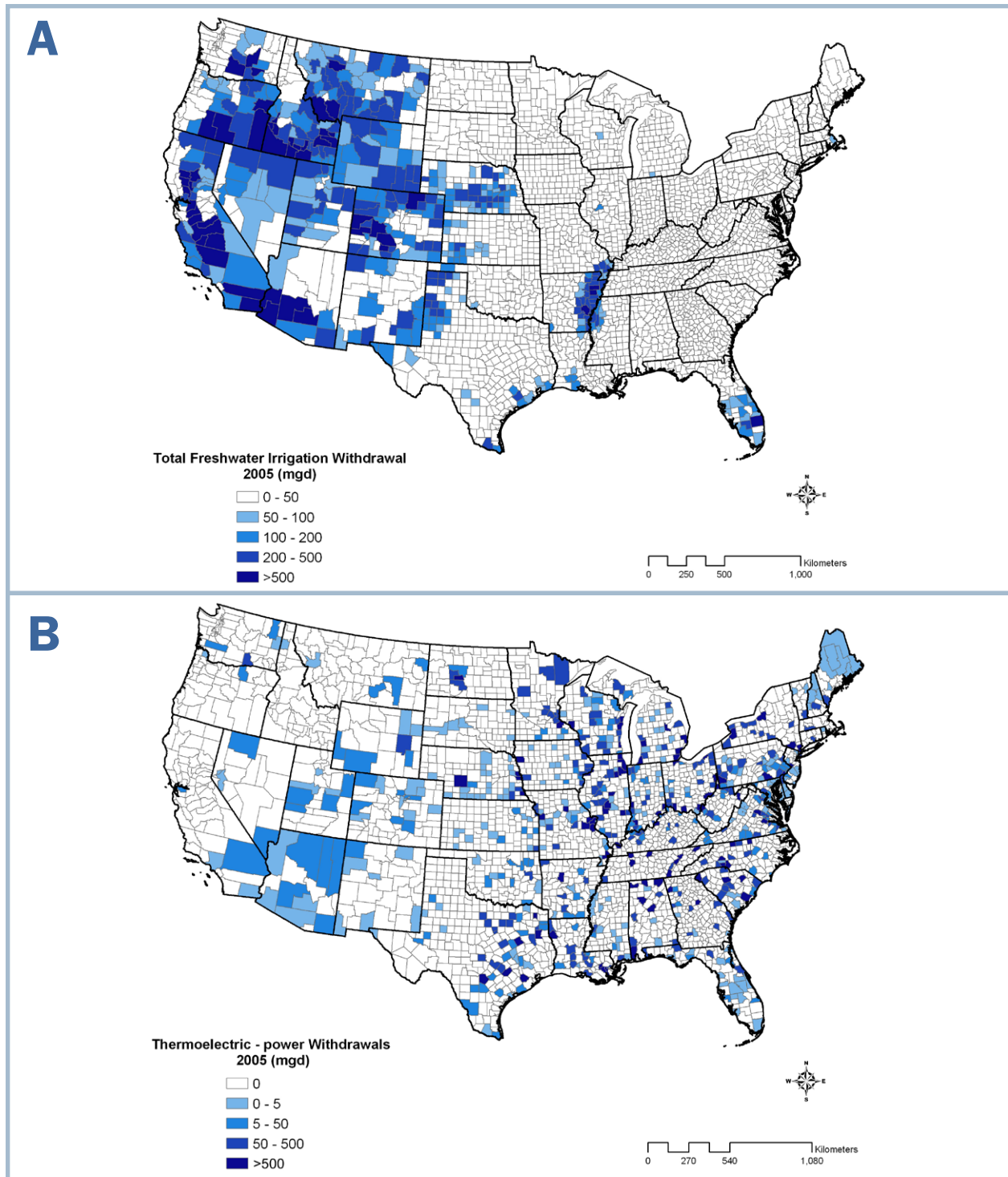
Figure 3. Withdrawals associated with irrigation and thermoelectric cooling, reported in units of mgd by the USGS (Kenny et al., 2009).

Municipal water demand was projected based on estimated future population and with current levels of per capita water use, similar to approaches used in prior analysis (Roy et al. 2003; 2005). Thermo-electric water use was projected based on new power generation and water withdrawal per unit generation at levels typical in modern power plants. New electricity generation demand estimates until 2030 were obtained from the Energy Information Administration (EIA), and extrapolated linearly to 2050. The EIA estimates are based on a model of the energy-economic system of the U.S., and also include projections of fuel type used for electricity generation (Annual Energy Outlook, EIA, 2009). Until 2030, EIA projections show the continued dominance of fossil and nuclear fuel sources in the electricity supply mix. For the purpose of this analysis, it assumed that future generation will have cooling water needs at a value similar to that reported in modern plants with evaporative cooling. These projection approaches are detailed below.

Population Change Forecast

Total population in 2050 was projected for the U.S. by the Census Bureau (CB). Population in the U.S. in 2050 is projected to increase by 48.8%, from 282.1 million in 2000 to 419.9 million (U.S. Census Bureau, 2008). The anticipated increase is relatively linear through this period (Figure 4). Population projections at the state level have also been made by the Census Bureau for the period 2010-2030. Population projections for future years at the county level for the entire U.S. are not readily available. At the county level, total population data are available from the CB for the period of 2000-2008. In previous analysis (Roy et al., 2003; 2005), population growth rates at the county level for the period of 1990-2000 were used to project population for the period of 2000-2025. In this analysis, population change rates for the period of 2000-2008 were used to project future populations for the period of 2008-2050. The projected population at the county level was aggregated to the state level and compared to data from CB for the period of 2010-2030. Projected population at the state level at five year intervals compared well to projections by the CB ($r^2 > 0.99$), with the largest discrepancy in projections occurring in Florida. Projected total population in the U.S. using the county-by-county
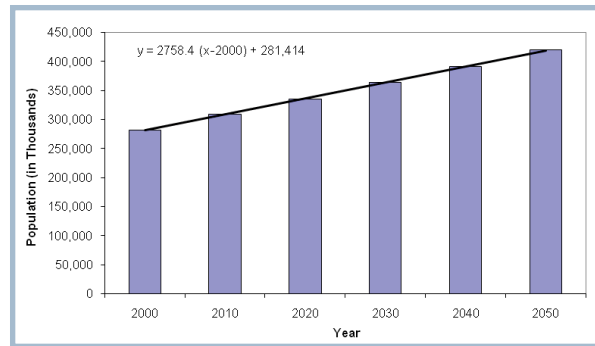
Figure 4. Projected U.S. total population for the period of 2000-2050 by U.S. Census Bureau.

method for 2050 is 419.0 million, which compares well to the CB national projection of 419.9 million. The county-level population projection approach was therefore used for this analysis, and for subsequent estimates of water use.

Municipal Water Demand Projection

Total freshwater demand for the municipal sector (including domestic supply) was projected based on population in 2030 and 2050 and per capita water use in 2000. The per capita water use is derived as the total fresh water withdrawal from public supply and domestic water use, divided by total population served. Per capita municipal water use varies through the country, and at the state level, varies from 54 gallons per capita per day to 187 gallons per capita per day (Kenny et al., 2009), with consistently higher values in the more arid parts of the country. In forecasting future municipal water demand in a given county, the per capita water use was assumed to remain at the 2005 levels, i.e., no change in per capita rates were assumed to occur as a result of climate change. Total municipal water demand is projected to increase by 32.8% in 2030 and by 54.8% in 2050 from 2005 levels.

Total Power Generation Forecast

To estimate the total power generation over 2006-2050, electric generation projected by the EIA for the period of 2006-2030 at the Energy Market Module (EMM) Regions was used (EIA, 2009). The projected electric generation is largest in the Southeastern Electric Reliability Council Region (excluding Florida) and the East Central Area Reliability Coordination Agreement Region (Figure 5). When forecasting the energy demand, the EIA assumes for
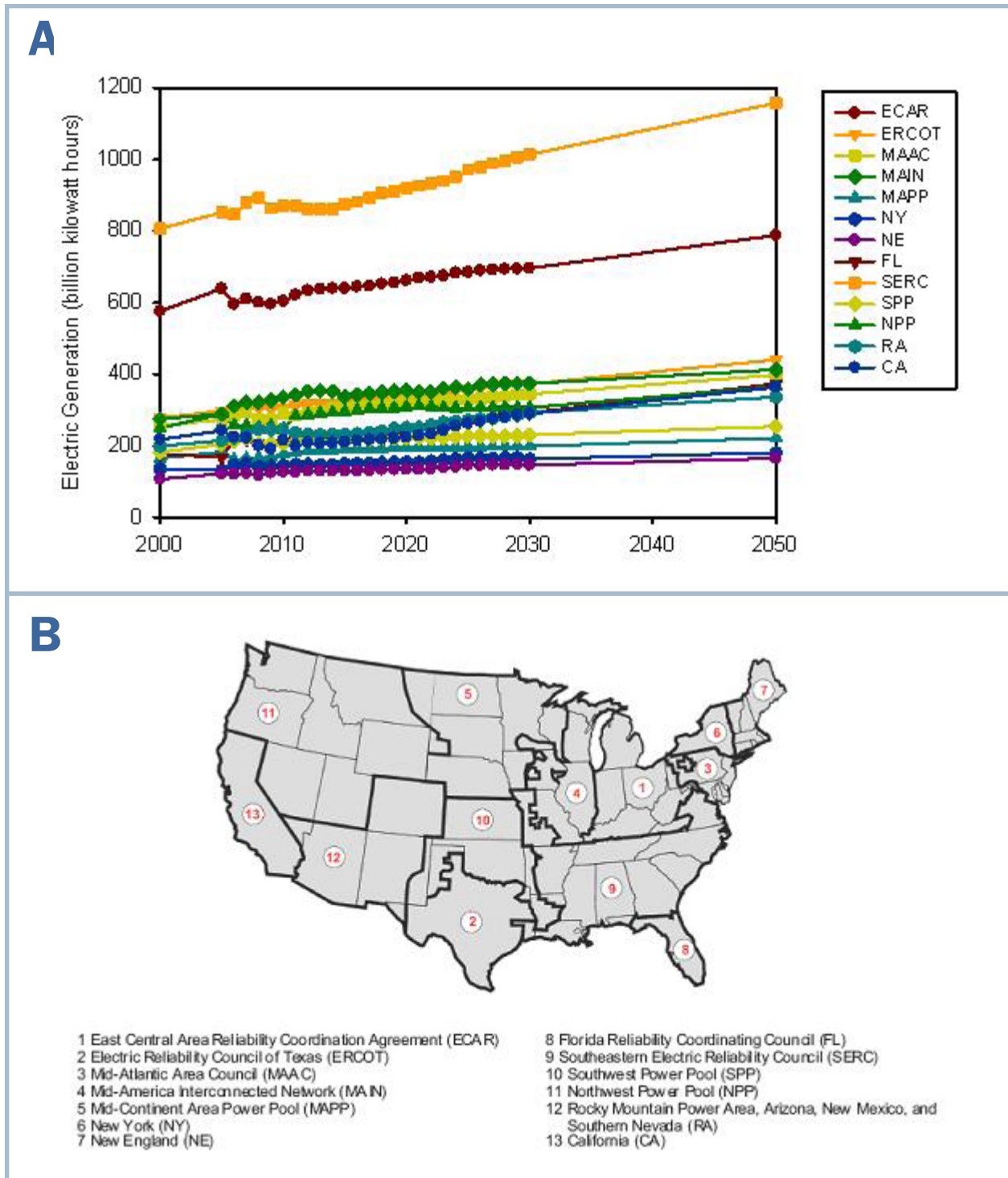
Figure 5. Projected electricity generation by EMM regions in the U.S. for the period of 2006-2050 (Source: EIA, 2009). EIA projections cover the period to 2030. These were linearly extrapolated to 2050 for the purpose of this analysis.

its reference case that growth in the world economy and fuel demand will recover by 2010, and that this growth will continue through the rest of the projection period (EIA, 2009). To extend the projections by EIA to 2050, the growth estimated for the period of 2010-2030 was extrapolated forward.

The projected thermoelectric generation in 2050 at the EMM region was first converted to the state level by applying percent changes for the period of 2005 to 2050. The percent changes were then applied to counties with existing thermoelectric generation in proportion to the level of current generation, i.e., the new generation was allocated to counties only with existing generation. This approach assumes that new thermoelectric generation, by virtue of proximity to existing transmission infrastructure or population centers, will be largely focused on areas with existing generation. Over a medium-term horizon, two to four decades, this is a reasonable starting assumption, although over a longer term, it may not hold, as the mix of generation, the population distribution, and transmission infrastructure may change.

Projecting Thermoelectric Water Withdrawal

In projecting water withdrawal due to increases in power generation, water withdrawal per unit of electricity generation was assumed to be 500 gallons/Megawatt-hour, a mid-point range in a recent DOE analysis of water use in modern closed-loop cooling power plants where values ranged from 226-1,100 gallons/Megawatt-hour (Feeley et al., 2008). This analysis included coal, natural gas, and nuclear power plants, all which have a need for cooling water. Power plants with closed-loop cooling use water multiple times, typically in cooling towers, before discharge back to the source water body. In closed-loop processes, the total quantity of water withdrawn is significantly lower than once-through cooling power plants (averaging 27,000 gallons/Megawatt-hour; Feeley et al., 2008).

The amount of thermoelectric water use in 2030 and 2050 was calculated as the total thermoelectric freshwater withdrawal in 2005, plus the amount of water withdrawal due to new power generation. The water use per unit power generation of 500 gallons/Megawatt-hour was used based on the assumption that water withdrawal per unit generation in future will be low due to the use of improved cooling technologies (typically the use of closed-loop cooling). Based on increasing generation needs alone, projected water withdrawal for thermoelectric generation for 2030 and 2050 increased by 8.45% and 13.5% from 2005 levels.

Projecting Total Water Demand in 2030 and 2050

Total water demand from different sectors in 2030 and 2050 can be estimated as total freshwater withdrawal in 2000 plus the projected changes in municipal and thermoelectric sectors. The analysis assumes that changes in irrigation, industrial, commercial, livestock, aquaculture, and mining water uses are less significant, and these were held at 2005 levels. Of these water uses, assumption related to irrigation is the most consequential, and merits further explanation. Irrigation water use was held constant for the following two reasons: (i) Water use for irrigation has remained within a narrow range or has declined marginally over the period 1970-2005, (ii) In the USGS dataset, the irrigation intensity, i.e., water use per unit area, did not show a clear correlation with climatic drivers (such as average precipitation and potential evapotranspiration), and may well be affected by other factors not known at the national scale, such as total water availability and water rights, the crop types being irrigated, and the irrigation practices being used . It is conceivable that irrigation water withdrawals will continue a gradual decline in the coming decades as demand in other sectors increases. However, to be conservative, the irrigation withdrawal values were essentially maintained at 2005 levels.

Climate Projections

For future climate projections, GCMs are relied upon to provide plausible, physically-based estimates of the climate response to changes in composition of boundary conditions and increasing atmospheric greenhouse gas concentrations. Many GCMs are in current use, developed by different modeling groups throughout the world, and have been included in assessments in the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (IPCC AR4, 2007). Because of the complexity of processes simulated by GCMs, their results vary, especially when variables such as precipitation are considered. For impact studies, such as this one, there is abundant support in the literature to use an ensemble of multiple models to represent a range of plausible future conditions, rather than to use the results of a single model (e.g., Christensen et al., 2007; Reichler and Kim, 2008; Maurer et al., 2007; Brekke et al., 2008; Pierce et al.,

2009). For this study, we follow this trend in recent research and use an ensemble of GCM projections.

The set of 16 GCMs from which we draw our ensemble is shown in Table 1 below. The GCM output for these models, for both the 20th and 21st century simulations, was obtained from the World Climate Research Programme's (WCRP's) Coupled Model Intercomparison Project phase 3 (CMIP3) multi-model dataset (Meehl et al., 2007).

Because the spatial scale of GCM output, typically 200 to 500 km, is too large to characterize climate over smaller areas, we used spatial downscaling to make the data more relevant at the regional scale being considered in this report. For this work we used published statistically downscaled data from the 16 models in Table 1 spanning a 150-year period from 1950 to 2099 (Maurer et al. 2007) downscaled to a 1/8° resolution (resulting in cells of approximately 12 by 12 km). Statistical downscaling uses long sequences of observed climate to establish statistical relationships between large- and fine-scale climate features. These are then applied to future projections to infer the fine-scale response implicit in the large-scale GCM projections. The historical data used for the downscaling is the gridded National Climatic Data Center Cooperative Observer station data, developed as described by Maurer et al. (2002).

For each GCM, outputs using different greenhouse gas emissions scenarios are available, three of which have been used for the standardized model comparisons as part of the CMIP3 work. These are labeled Scenarios A1B, A2, and B1, following the convention of Nakicenovic et al. (2000). Each scenario embodies a different storyline for growth, technology diffusion, and interconnectivity among different regions. Broadly speaking, the three emission scenarios in the CMIP3 work represent a higher (A2), medium (A1B), and lower (B1) rate of emission growth through the 21st century. For the purpose of this analysis the A1B scenario projections for temperature and precipitation were used. Over the time period of interest in this analysis, 2020-2059, the differences between emission scenarios are relatively small, and the selection of one scenario over another would not change the results very much. Greater divergences between scenarios

occur by the late 21st century, but this was not evaluated in this study.

To account for year-to-year and decadal variations in projections of temperature and precipitation projected by the GCMs, reflecting longer-term cycles in the underlying oceanic and atmospheric processes, projections for 2030 and 2050 were represented using twenty-year averaging periods about the mid-point years: the average climate for 2020 to 2039 represents 2030, and 2040 to 2059 represents 2050. For the analyses requiring monthly data, the average monthly value across the 20-yr period was used. Thus, for January 2030, we use an average of January values for each of the 20 years from 2020 to 2039. In the descriptions that follow, when we refer to temperature or precipitation from 2030 or 2050, we are referring to the average values over a 20-year period that is centered around 2030 or 2050.

The 1/8° resolution downscaling results in approximately 54,000 grid cells to cover the land area of the 48 conterminous U.S. Because we are also looking at monthly values at each cell over a 20-year period and 16 GCMs, this results in an enormous amount of data. For the purpose of this analysis, the climate data were processed using the Climate Wizard tool (http://ClimateWizard.org, Girvetz et al. 2009). The Climate Wizard tool was used to calculate the median, minimum and maximum of the 16 GCMs at each grid cell for the monthly average temperature and precipitation projected during 2020-2039 and 2040-2059. Similarly, the 20th, 25th, 40th, 60th, 75th, and 80th percentiles were calculated across all 16 GCMs for the projected monthly temperature and precipitation.

Available Precipitation: Historical Values and Projections for 2030 and 2050

Available precipitation, defined as the difference between precipitation and potential evapotranspiration (PET) for each month of the year (Roy et al. 2005), was computed based on averages of historical data at 344 climate divisions over the period of 1934-2000. Monthly temperature and precipitation data at the climate division level was obtained from the National Oceanic and Atmospheric Administration (http://www.cpc.ncep.noaa.gov/soilmst/index_jh.html; methodology in Huang et al., 1996).

Table 1 - Table of 16 candidate GCMs for use in this study.

	Modeling Group, Country	IPCC Model I.D.	Primary Reference
1.	Bjerknes Centre for Climate Research	BCCR-BCM2.0	[Furevik et al., 2003]
2.	Canadian Centre for Climate Modeling & Analysis	CGCM3.1 (T47)	[Flato and Boer, 2001]
3.	Météo-France / Centre National de Recherches Météorologiques, France	CNRM-CM3	[Salas-Mélia et al., 2005]
4.	CSIRO Atmospheric Research, Australia	CSIRO-Mk3.0	[Gordon et al., 2002]
5.	U.S. Dept. of Commerce / NOAA / Geophysical Fluid Dynamics Laboratory, USA	GFDL-CM2.0	[Delworth et al., 2006]
6.	U.S. Dept. of Commerce / NOAA / Geophysical Fluid Dynamics Laboratory, USA	GFDL-CM2.1	[Delworth et al., 2006]
7.	NASA / Goddard Institute for Space Studies, USA	GISS-ER	[Russell et al., 2000]
8.	Institute for Numerical Mathematics, Russia	INM-CM3.0	[Diansky and Volodin, 2002]
9.	Institut Pierre Simon Laplace, France	IPSL-CM4	[IPSL, 2005]
10.	Center for Climate System Research (The University of Tokyo), National Institute for Environmental Studies, and Frontier Research Center for Global Change (JAMSTEC), Japan	MIROC3.2 (medres)	[K-1 model developers, 2004]
11.	Meteorological Institute of the University of Bonn, Meteorological Research Institute of KMA	ECHO-G	[Legutke and Voss, 1999]
12.	Max Planck Institute for Meteorology, Germany	ECHAM5/MPI-OM	[Jungclaus et al., 2006]
13.	Meteorological Research Institute, Japan	MRI-CGCM2.3.2	[Yukimoto et al., 2001]
14.	National Center for Atmospheric Research, USA	PCM	[Washington et al., 2000]
15.	National Center for Atmospheric Research, USA	CCSM3	[Collins et al., 2006]
16.	Hadley Centre for Climate Prediction and Research / Met Office, UK	UKMO-HadCM3	[Gordon et al., 2000]

The available precipitation in 2030 and 2050 was estimated using a similar approach, except that GCM-downscaled values of precipitation and temperature were used rather than historical values. The ensemble median values of the 16 climate models in Table 1 were used to represent future precipitation and temperature for each month.

Projecting Evapotranspiration and Available Precipitation in Future Years

In projecting the available precipitation in 2030 and 2050, the 50th percentile from the 16 GCMs in Table 1 was used. For each of years analyzed, the difference between monthly precipitation and potential evapotranspiration (P–PET) over the

course of a year was summed to estimate the annual available precipitation. When precipitation is less than potential evapotranspiration for a particular month, the available precipitation of that month was counted as 0. The monthly potential evapotranspiration (PET) was estimated based on projected monthly temperature, using the Hamon equation (Hamon, 1961):

$$E = \frac{2.1 H_t^2 e_s}{(T_t + 273.2)}$$

E = evaporation, day t (mm/day)

Ht = average number of daylight hours per day during the month in which day t falls

es = saturated vapor pressure at temperature T_t (kPa)

T_t = temperature, day t (°C)

Ht was calculated by using the maximum number of daylight hours on day t.

Saturated vapor pressure es was estimated as:

$$e_s = 0.6108 \exp\left(\frac{17.27 T_t}{237.3 + T_t}\right)$$

The Hamon equation is one of several approaches used to estimate potential evapotranspiration, and was used because of its simplicity and relatively modest data requirements. The limited data requirements are an important constraint because we are applying the model across a broad geographic scope and into the future, where additional data (e.g., soil moisture and wind speed) are not easily available. Furthermore, comparisons of multiple PET estimation approaches have demonstrated that the Hamon method is generally preferable for contemporary climate studies (Vorosmarty et al., 1998). A similar cross-comparison of PET estimation methods in the Southeast (Lu et al., 2005), where different techniques were used to compute water budgets for 36 watersheds, identified the Hamon equation as one of three methods suitable for use. For these reasons, future estimates of PET, used to compute the available precipitation, were based on the Hamon equation. PET projections do not consider changing land use as a factor, given the time frame and spatial scale applied in this analysis, changing land use was not variable over time.

Ratio of Future Water Demand and Available Precipitation

As a metric representing the intensity of water development in a region, the ratio between water demand and available precipitation can be computed. To compute the ratio of future demand and available precipitation, the projected available precipitation at 1/8° scale was aggregated to the county level. The projected water withdrawal in mgd as reported by the USGS was normalized to the county area, and represented in inches for direct comparison to available precipitation. High values of this ratio are indicative of the withdrawal of a large fraction of the available precipitation, and are representative of what is called water resources "development" in a region.

Besides ratios of future water demand and available precipitation, another metric computed was the summer deficit, defined as the available precipitation minus withdrawal in June, July, and August, typically the three warmest months of the year that correspond to increased municipal, thermoelectric cooling, and irrigation demand. The irrigation demand is reported as an annual value, and as noted above, is assumed to remain flat over the time horizon of the analysis on an annual basis. However, during the year, irrigation water is applied to meet the deficit between precipitation and evapotranspiration, and the demand is not constant over the year. In estimating irrigation demand in June, July, and August, it was assumed that irrigation needs are proportional to monthly deficit in available precipitation (P–PET). The summer deficit is an indicator of water shortage on a seasonal basis that must be met through stored sources or groundwater.

Development of an Index of Water Sustainability and Climate Susceptibility

The water resources literature presents several examples of indices that are used to integrate different measures of water availability and access to human populations (e.g., Loucks and Gladwell, 1999; Vorosmarty et al., 2005). Well known examples include the Water Stress Index defined as the ratio of available river runoff to population in basin, with a level of 1700 m^3 per capita per year being defined as the threshold below which a basin may be considered to be water stressed (Falkenmark et al., 1989).

Another simple index is the basic water requirements (BWR) value of 50 liters per capita per day to meet basic human needs (Gleick, 1996, 1998). A multidimensional index in common use is the Water Poverty Index that combines physical and socioeconomic factors and has been used to rank water stress in many regions of the world (Lawrence et al., 2002; Sullivan et al., 2003). Similarly, Hurd et al. (1999) assessed relative regional vulnerability to climate change using a set of unweighted indices representing offstream and instream uses, representing variables such as levels of freshwater withdrawal, groundwater depletion, flood risk, etc.

Several of the published indices were developed to meet different purposes, ranging from human access to clean water or ecosystem health. In the particular context of this study in the United States, where access to water for basic human needs is not a major concern, and where detailed data on water use is readily available through the USGS water use surveys, a more targeted index may be developed that is focused on water supply concerns in coming decades. For this reason, building on past work (Roy et al., 2003, 2004), a water supply sustainability index was developed to evaluate multiple water constraints in a composite index. The index can be computed using historical precipitation (e.g., 1934-2000) or using future projected precipitation for the 21st century from GCMs. Metrics considered in the index include natural available precipitation, the extent of water development already in place, dependence on groundwater, the region's susceptibility to drought, projected increases in water use, and the difference between peak summer demand and available precipitation, a measure of storage requirements. Regardless of the structure of the index used, it is important to emphasize that it is at best an indicator, and a means to summarize information across a broad geographic domain, in this case the lower 48 states of the U.S.. The goal of the index is to present information compactly, and to highlight areas that need further attention, and more refined local-scale analysis (e.g., see case studies in the the West discussed by Anderson and Woosley, 2005).

In compositing the sustainability index for future years, five criteria were used. The risk to water sustainability for counties meeting two of the criteria are classified as "moderate," those meeting three of the criteria are classified as "high," and those meeting four or more are classified as "extreme." Counties meeting fewer than two criteria are considered to have low risk to water sustainability. The criteria are as follows:

1. Extent of development of available renewable water: greater than 25% of available precipitation is used (calculated based on projected water demand and available precipitation in 2050). The larger the fraction of available precipitation that is used to meet human needs, the greater the risk to supply when this quantity changes.

2. Sustainable groundwater use: ratio of groundwater withdrawal to available precipitation is greater than 25% (based on current groundwater withdrawal). Greater withdrawals may be indicative of unsustainable use of aquifers.

3. Susceptibility to drought: Summer deficit, as described above, is greater than 10 inches, and this water requirement must be met through stored surface water, groundwater withdrawals, or transfers from other basins. In estimating irrigation demand in June, July and August, it was assumed that irrigation needs are proportional to monthly deficit in available precipitation (P– PET).

4. Growth in water demand: The increase of total freshwater withdrawal between 2000 and 2050 is more than 20%. Based on the discussion above, growth in water demand is driven largely by population growth and the need for new thermoelectric generation.

5. Increased need for storage: summer deficit increases more than 1 inch over 2005 and 2050. As noted in item 3 above, the summer deficit is met through stored surface water, groundwater, or transfers from other basins. An increase in the summer deficit means that additional supply must be generated in the dry months through new storage or other means.

Results

Projected Precipitation and Temperature Changes by the Climate Models

A plot of projected precipitation changes between 1961-1990 and 2020-2039 (Figure 6) indicates decreases in precipitation in the West and parts of the Gulf states and increases in the Northeast and parts of the Midwest. Projected precipitation changes between 1961-1990 and 2040-2059 indicate similar spatial patterns, although with greater differences from 20th century values: there are decreases in the Gulf states (Texas) of more than 1 inch/yr and increases in the Northeast by 2-4 inches/yr (Figure 7). California stands out as an exception with changes in the Sierra region and parts of the coast moving from a decrease to an increase. A closer scrutiny of the underlying data show limited systematic variation in the precipitation for this region as a result of climate change, and the absolute changes (going from -1 inch to +1-2 inches) are relatively small compared to the total precipitation.

Projected temperature increases between 1961-1990 and 2020-2039 are 0.9 – 1.95 °C, with the highest temperature increases occurring in parts of the Midwest and parts of the western mountain regions (Figure 8). Projected increases in temperature for 2040-2059 are greater and range from 1.5 to 3 °C. The highest temperature increases are in the Midwest and mountain regions of the West (Figure 9).
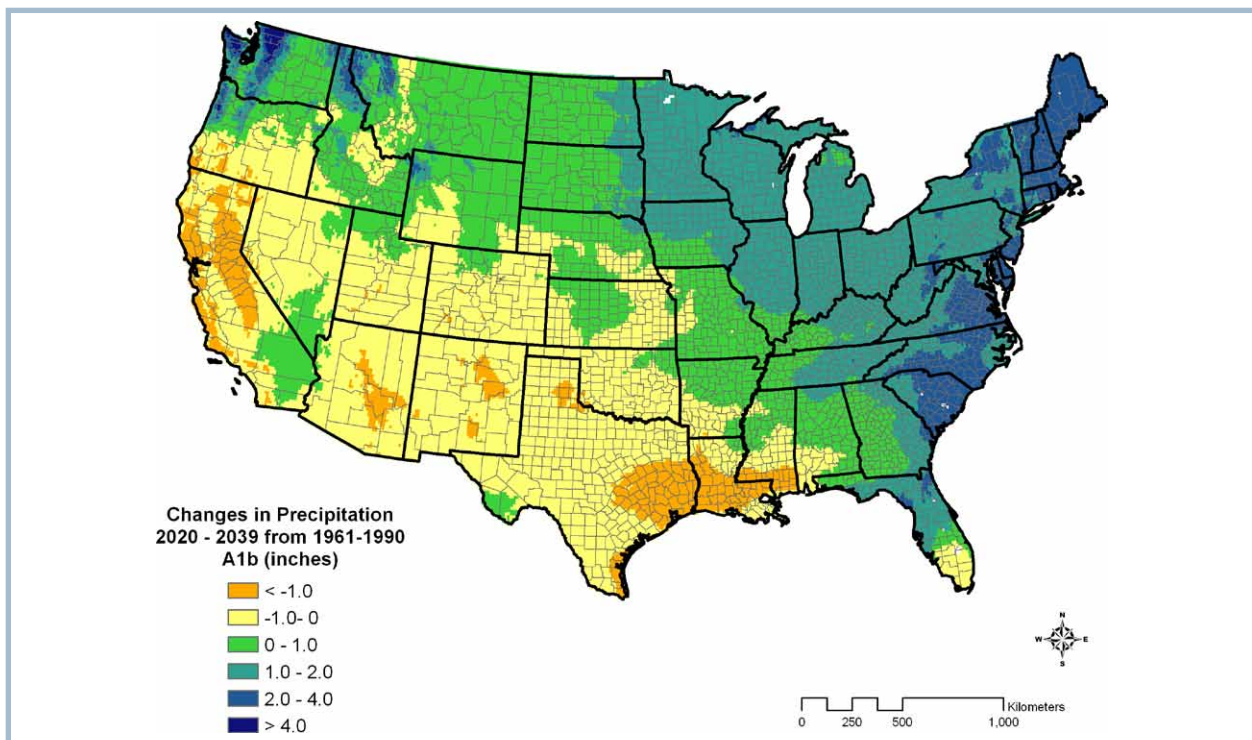
Figure 6. Predicted changes in mean annual precipitation from 1961-1990 to 2020-2039 (median of 20-year means computed from the 16 GCMs in Table 1).
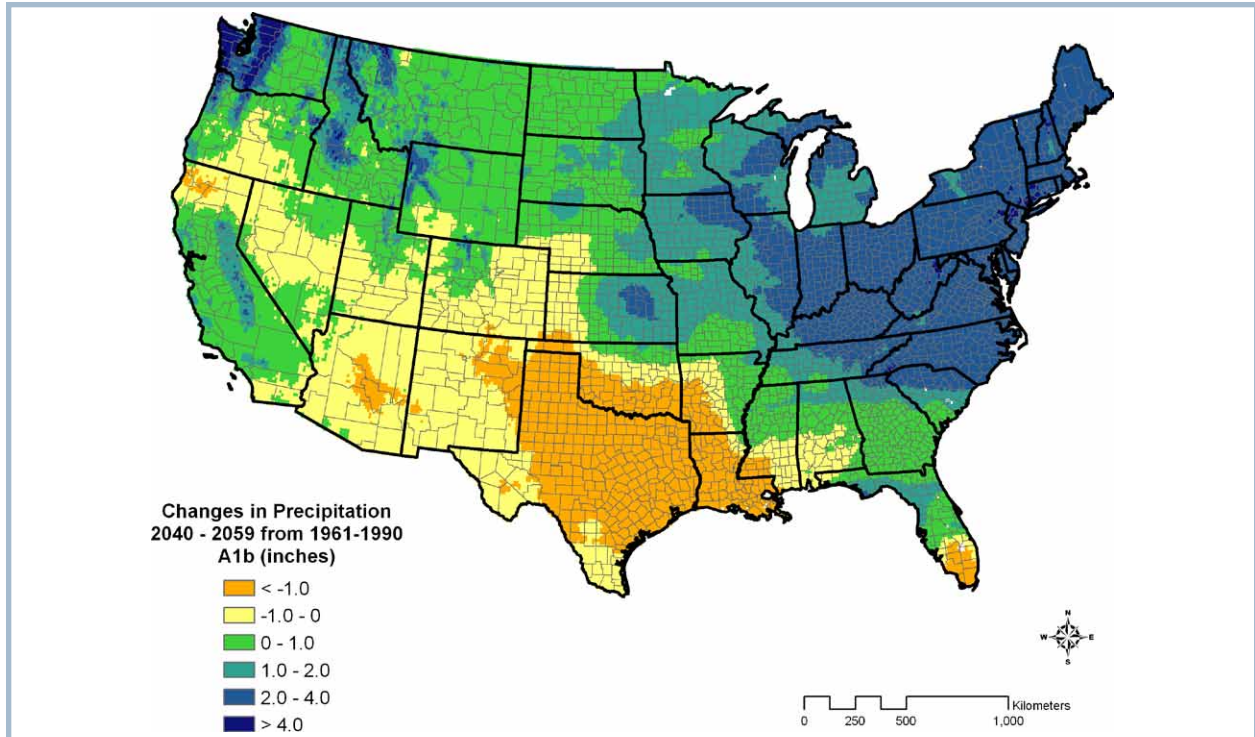
Figure 7. Predicted changes in mean annual precipitation from 1961-1990 to 2040-2059 (median of 20-year means computed from the 16 GCMs in Table 1).
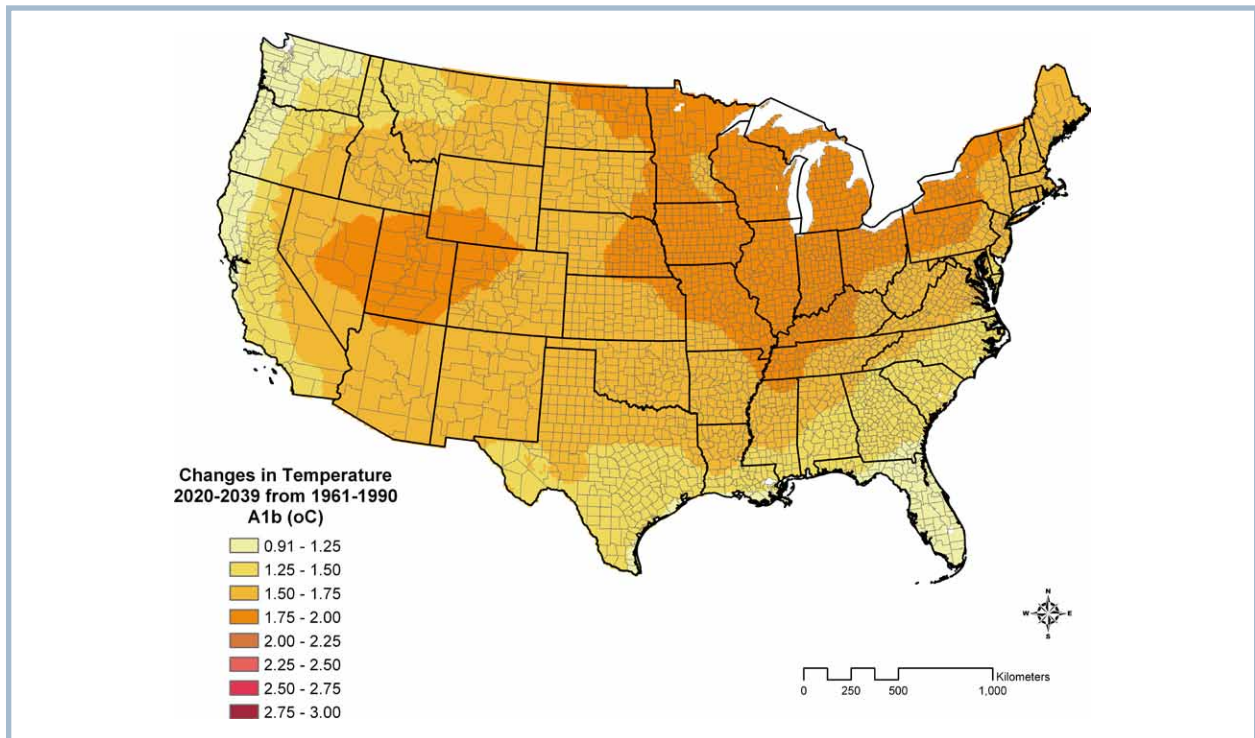
Figure 8. Predicted changes in mean temperature from 1961-1990 to 2020-2039 (median of 20-year means computed from the 16 GCMs in Table 1).
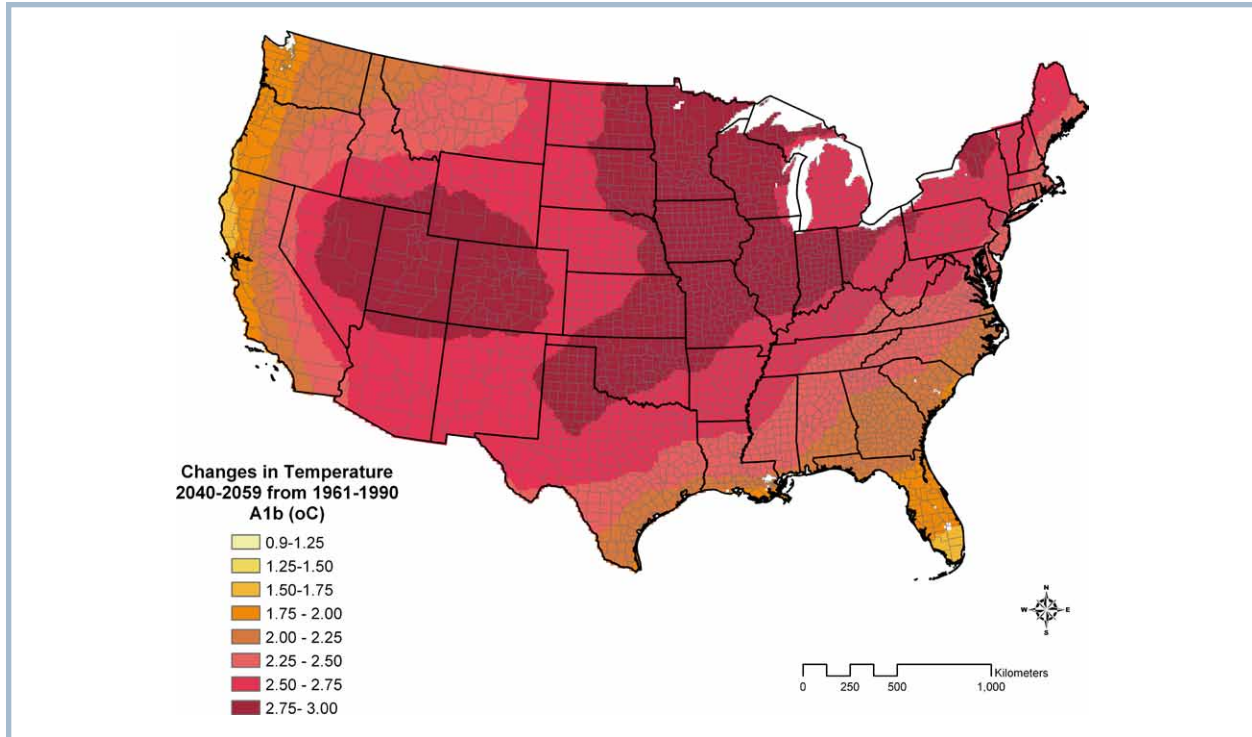
Figure 9. Predicted changes in mean temperature for the period of 1961-1990 to 2040-2059 (median of 20-year means computed from the 16 GCMs in Table 1).

A quantitative measure of the variation in projected precipitation across different GCMs defined as (75th percentile value minus 25th percentile value)/ Median, termed the interquartile ratio, is shown in Figure 10, and was computed using the Climate Wizard tool. Low values of the interquartile ratio at a given location imply that the 16 GCM projections for this location are in general agreement, whereas large values of this ratio suggest greater differences across models. The precipitation trend projected by the GCMs may be considered more certain when the interquartile ratio among models is low. The interquartile ratio shows agreement in precipitation projections for most of the country with the Southwest and the Great Plains being the exceptions. In other words, the 16 models predict future precipitation with greater uncertainty in these regions, a finding that is important because these are also among the most water short and water stressed regions in the country.

Projected Available Precipitation in 2050

Projected available precipitation (P–PET) in 2050 under the A1b scenario, using the median of 16 GCMs, is shown in Figure 11. Projected changes in total available precipitation for 2050 from the twentieth century records (1934-2000) are shown in Figure 12. Projected available precipitation is less than 2 inches for many areas in the West and more than 15 inches in the Northeast, Northwest, and South Atlantic. Projected decreases in available precipitation from historical records are generally less than 2.5 inches/yr with some regions in Texas and the Mississippi Basin showing more than 5 inches of decrease. Similar maps for 2030 are presented in the appendix.

Changes in available precipitation are a result both of changing precipitation and of changing PET, as a consequence of higher temperatures. In areas
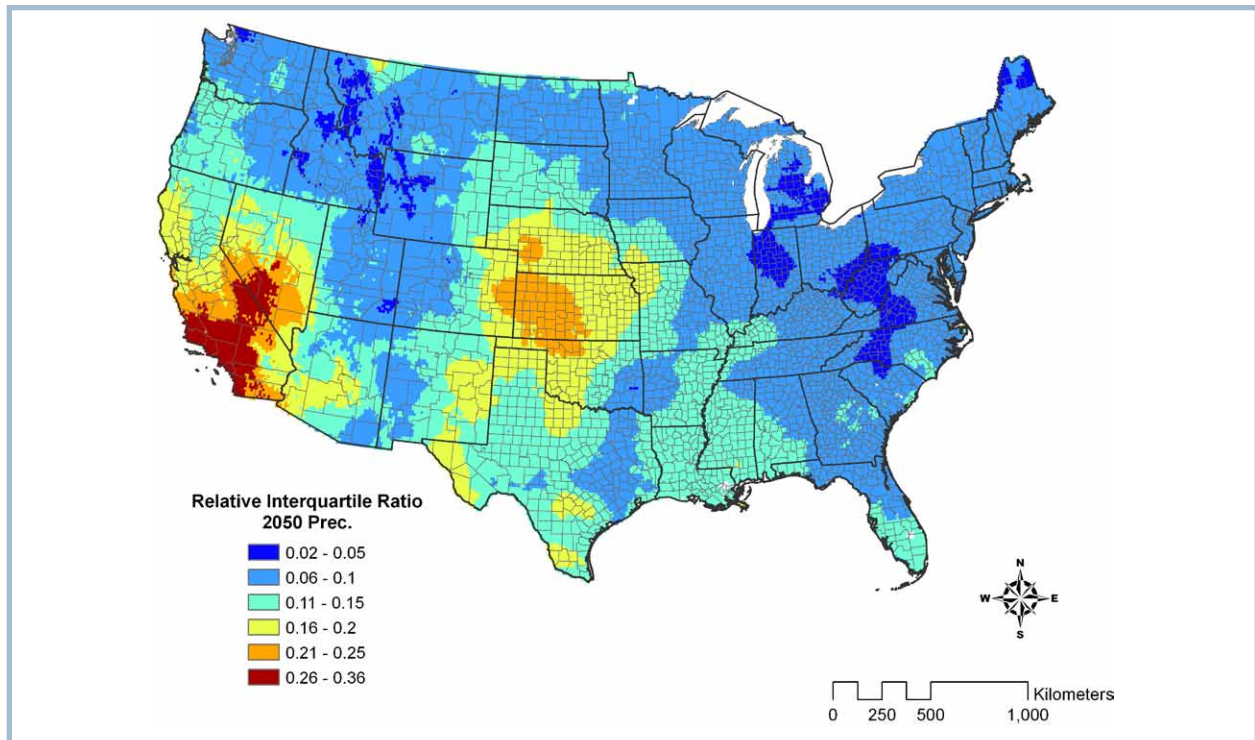
Figure 10. Relative inter quartile ratio (RIQR) for the 2050 precipitation based on analysis of monthly data from 16 GCMs. The RIQR is a quantitative measure of the variation in projected precipitation across different GCMs defined as (75th percentile value -25th percentile value)/Median. Low values of the ratio at a given location imply that the 16 GCM projections for this location are agreement, whereas large values of this ratio suggest differences across models. The RIQR shows agreement in annual precipitation projections for most of the country with the Southwest and the Great Plains being the exceptions. These are among the most water short and water stressed regions in the country.

where both changes are adverse, i.e., higher PET and lower precipitation, the impacts to available precipitation are most significant. Figure 13 shows the projected changes in PET in comparison with changes in precipitation over the 2000-2050 period. The most significant adverse changes are in the central and southwestern regions of the U.S.

The projected available precipitation shows patterns similar to historical precipitation patterns (Roy et al. 2005). The main changes are increases in certain low available precipitation zones (0-5 inches/yr) and decreases in high available precipitation zones (15-25 inches/yr).

Projected Total Water Demand in 2050

Projected total freshwater withdrawal in 2050 based on changes in municipal and thermo-electric water demand are shown in Figure 14. Projected changes in water demand in 2050 are shown in Figure 15. Similar maps for 2030 are presented in the appendix. Under the business as usual scenario presented here, total water demand is projected to increase by 7.3% in 2030 and by 12.3% in 2050 from 2005 levels.

Total freshwater withdrawals in 2050 are significant in the major agricultural and urban areas
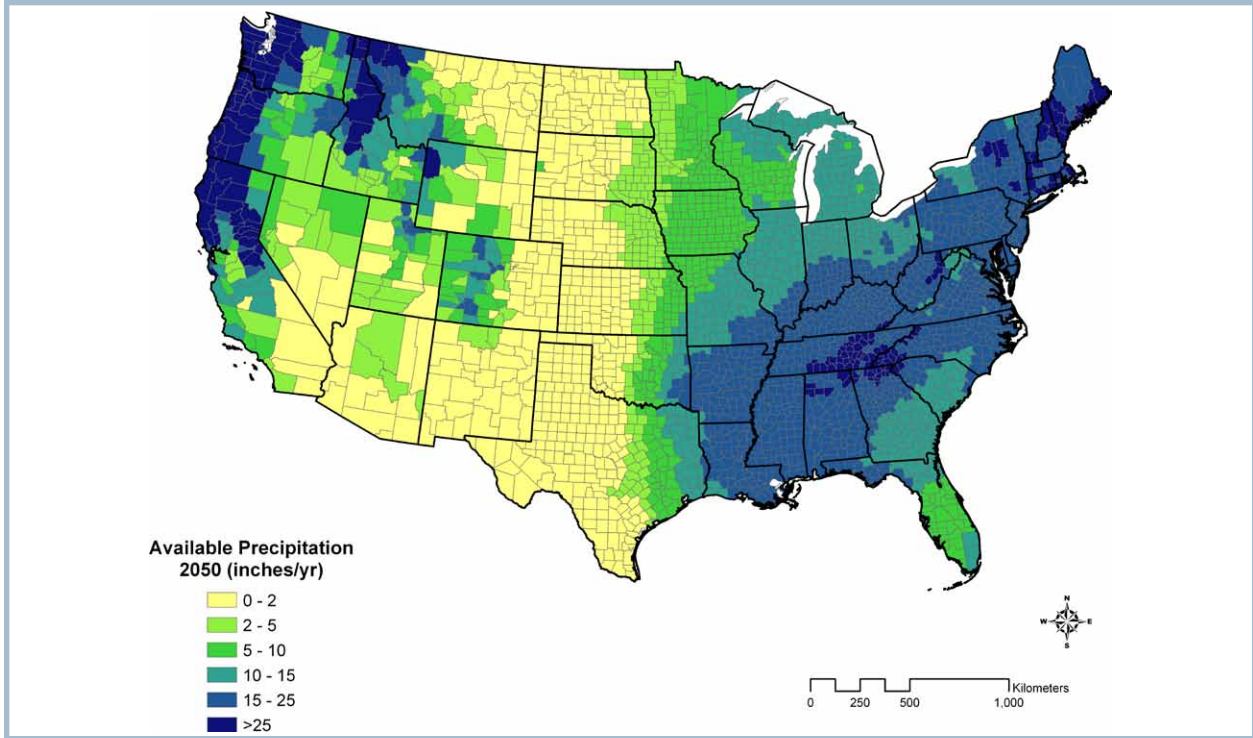
Figure 11. Projected available precipitation in 2050 aggregated to the county level, based on the 50th percentile of projected precipitation by climate models (ensemble of 16 GCMs).
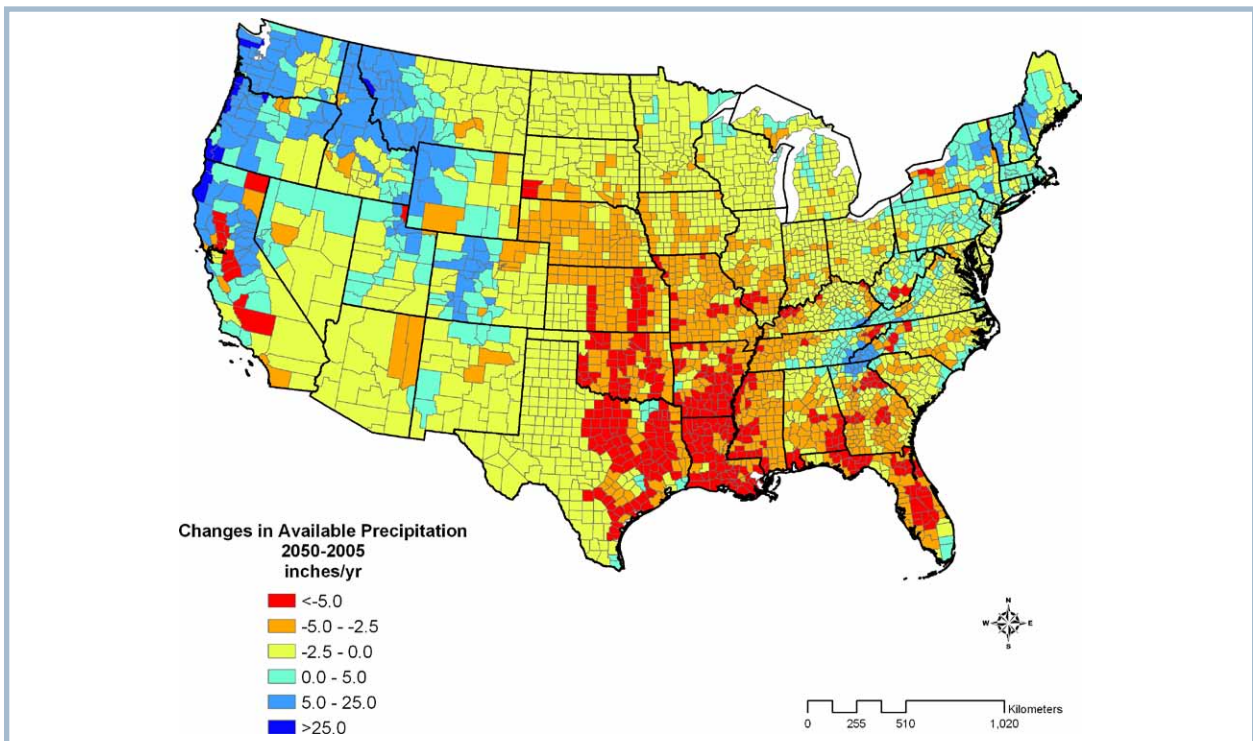
Figure 12. Changes in available precipitation from 2005 to 2050 in inches/yr. 2050 values are based on an ensemble of 16 GCMs and represent conditions between 2040 and 2059.
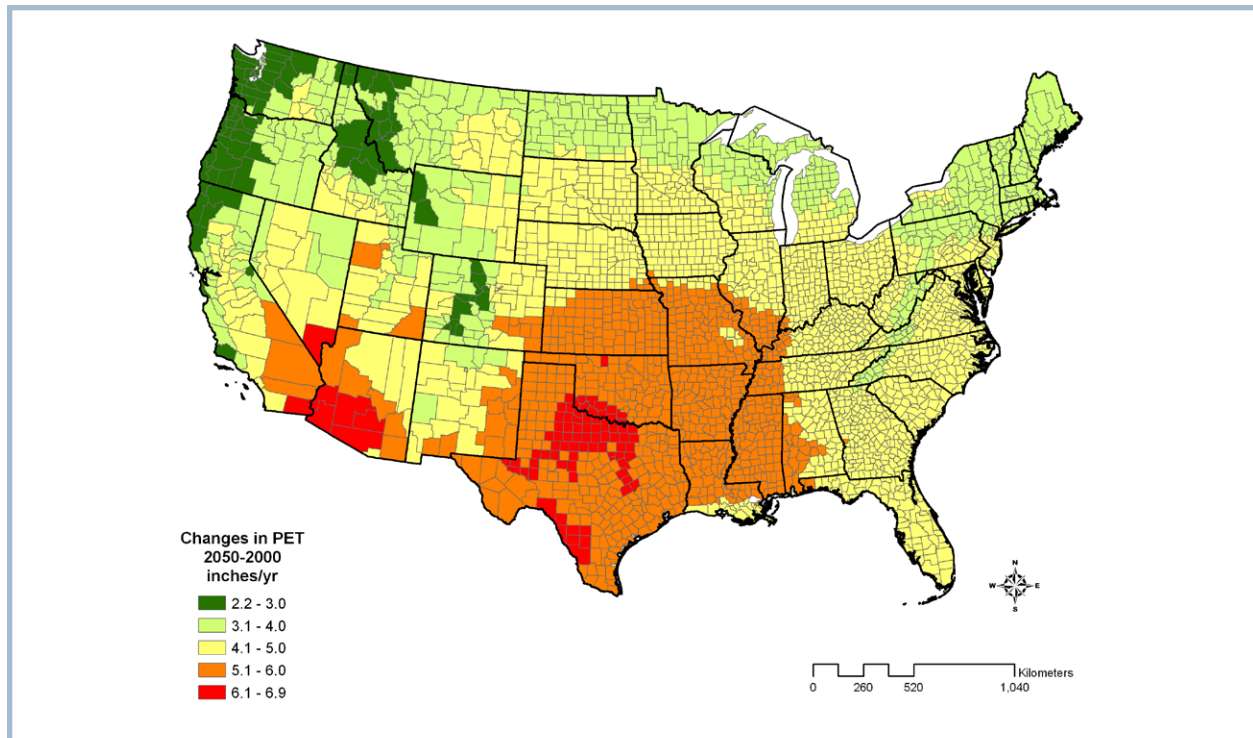
Figure 13. Projected changes in PET during 2000-2050 as a result of projected climate change. The change in PET, estimated using the Hamon equation, largely as a consequence of temperature change, can be compared with the projected change in precipitation (Figure 7).

throughout the nation. Total freshwater withdrawals in 2050 are between 0.2-0.5 inches/yr with some areas in the West showing withdrawals of 1-5 inches. Some areas in California, Texas and the Mississippi River basin show water demand of more than 10 inches/yr. The projected changes in water withdrawal include decreases in the Midwest and increases in some areas in the Southeast, the South, and the West. The projected increases in water demand are 0.1 inches/yr for most regions, with a few areas showing more than 3 inches of increase.

Projected percent changes in total freshwater withdrawal include decreases in the Midwest and some areas in the Northeast. The projected percent increases in water withdrawal are greater than 25% in many areas of the U.S. including the arid Arizona/New Mexico area, the populated areas in the South Atlantic region, Florida, Mississippi River basin, and Washington DC and surrounding regions.

Projected Ratios of Water Demand and Available Precipitation

The projected total freshwater withdrawal as a percentage of available precipitation for 2050 assuming climate change impacts and for historical precipitation (1934-2000) is shown in Figure 16a and Figure 16b. Similar plots for 2030 are presented in the appendix. These maps can be used to compare directly the location and magnitude of impacts due to climate change. As the maps for the historical precipitation show, there are some regions in the U.S. where withdrawal is larger than renewable supply, indicative of transport by rivers, interbasin transfer by manmade canals or aqueducts, or groundwater mining in excess of recharge. However, the consideration of climate change impacts greatly expands areas where water withdrawal is greater than renewable supply. This is especially the case for much of the western U.S., in particular areas over the Ogallala Aquifer (Central U.S.) and Edwards Aquifer (Texas), and in the Southwest.
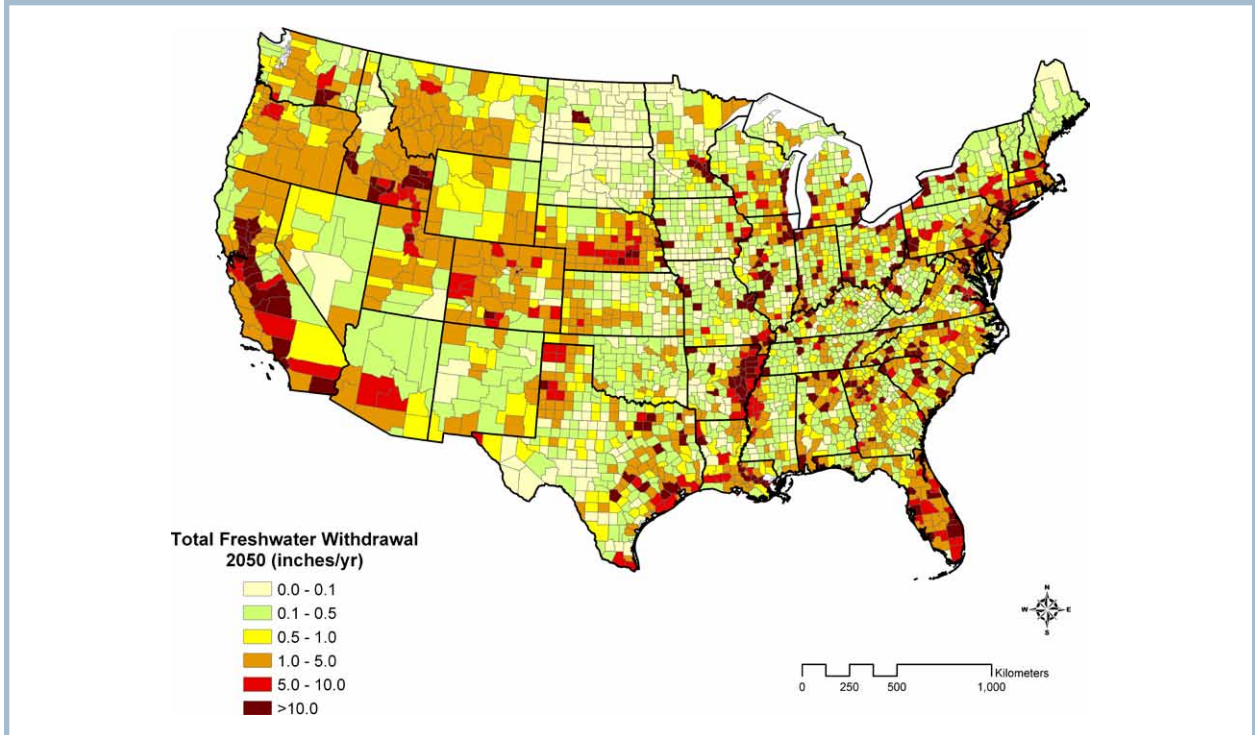
Figure 14. Projected total freshwater withdrawal in 2050 (inches/yr). The 2050 values are based on population growth and increased electric generation capacity, and assuming water use rates for domestic use at 2005 levels, albeit varying by county, and new cooling water use at 500 gallons/Megawatt-hour. Withdrawals for other sectors are assumed to remain at their 2005 levels.
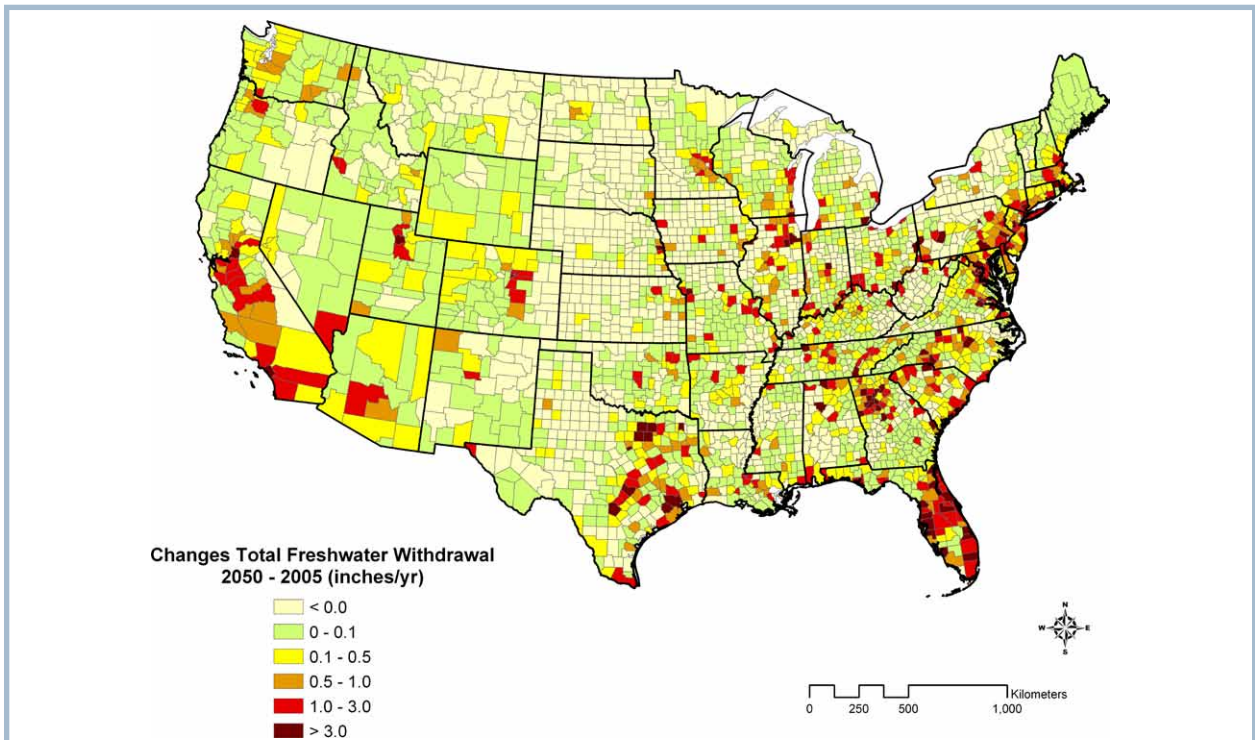

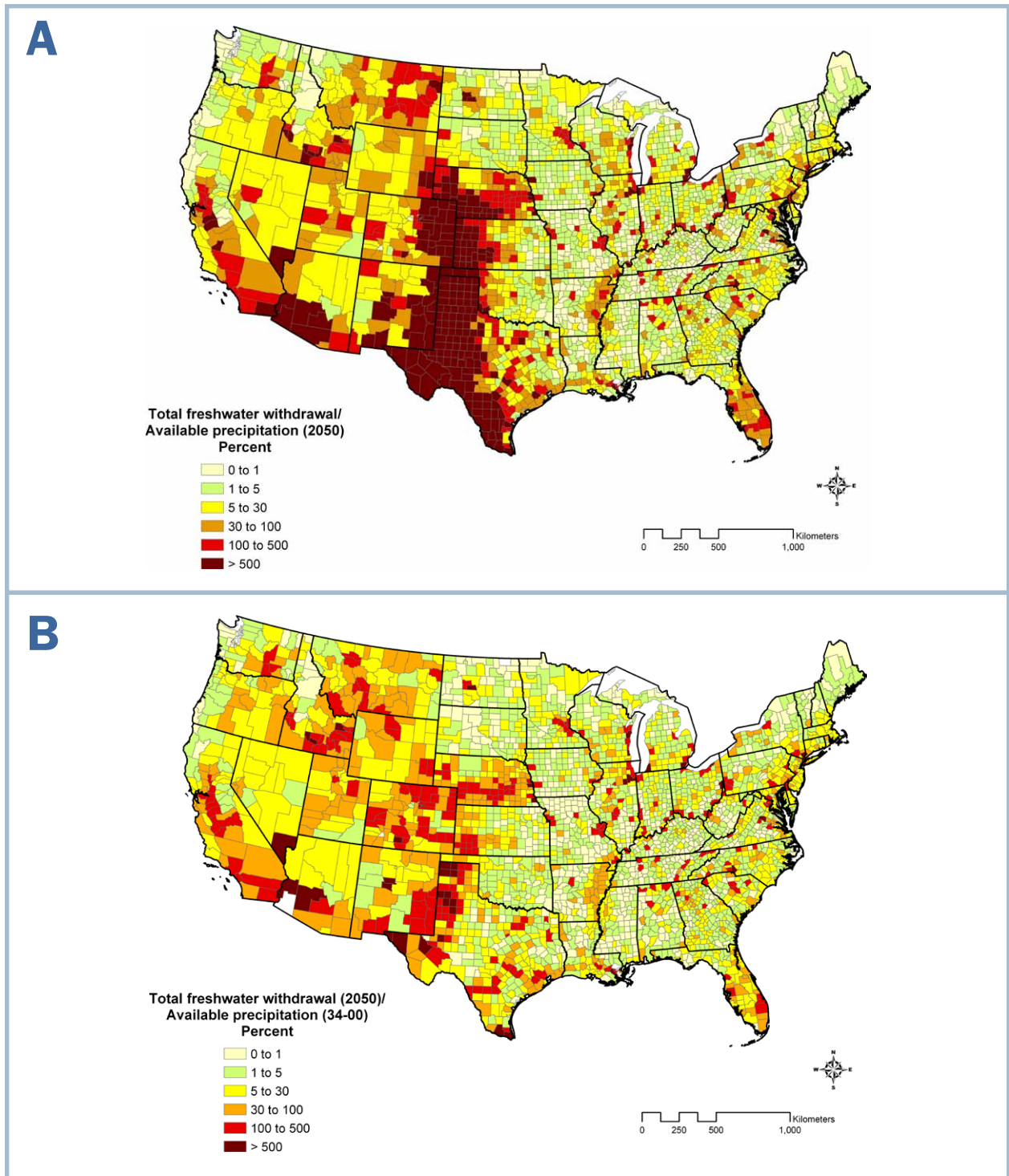Figure 15. Changes in total freshwater withdrawal from 2005 to 2050 (inches/yr).

Figure 16. (a) Projected total water withdrawal as percent of available precipitation in 2050. 2050 values are based on an ensemble of 16 GCMs and represent conditions between 2040 and 2059. (b) Projected total freshwater withdrawal in 2050 as percent of historical (1934-2000) total available precipitation.

The estimated water withdrawal as a percent of available precipitation is generally less than 5% for the majority of the eastern U.S. and less than 30% for the majority of the West. In some arid regions (e.g., Texas and California) and agricultural areas, water withdrawals are estimated to be greater than 100% of the available precipitation. In some regions (e.g., Texas), due to projected changes in precipitation and increases in temperature, projected PET exceeds precipitation, and results in 0 available precipitation.

Projected Water Sustainability Supply Index

The water supply sustainability index is computed for 2050 demands using GCM-projected available precipitation and using historical available precipi-tation (Figure 17). The map of the water supply sustainability index suggests several areas that are at high or extreme risk to climate change impacts in 2050. These areas include California, Nevada, Arizona, Texas and part of the Florida. The majority of the Midwest and the South are considered to be at moderate risk, whereas the Northeast and some regions in the Northwest are at low risk of impacts. Without the consideration of climate change in future years, the range of counties with water supply sustainability is far smaller, although many of the same states are affected, including parts of California, Arizona, Nevada, Texas, Arkansas, and Florida. The impacts on the interior, central parts of the U.S. (especially over the Ogallala Aquifer), Texas (over the Edward Aquifer), and much of the Southeast are considerably more amplified in the presence of climate change.
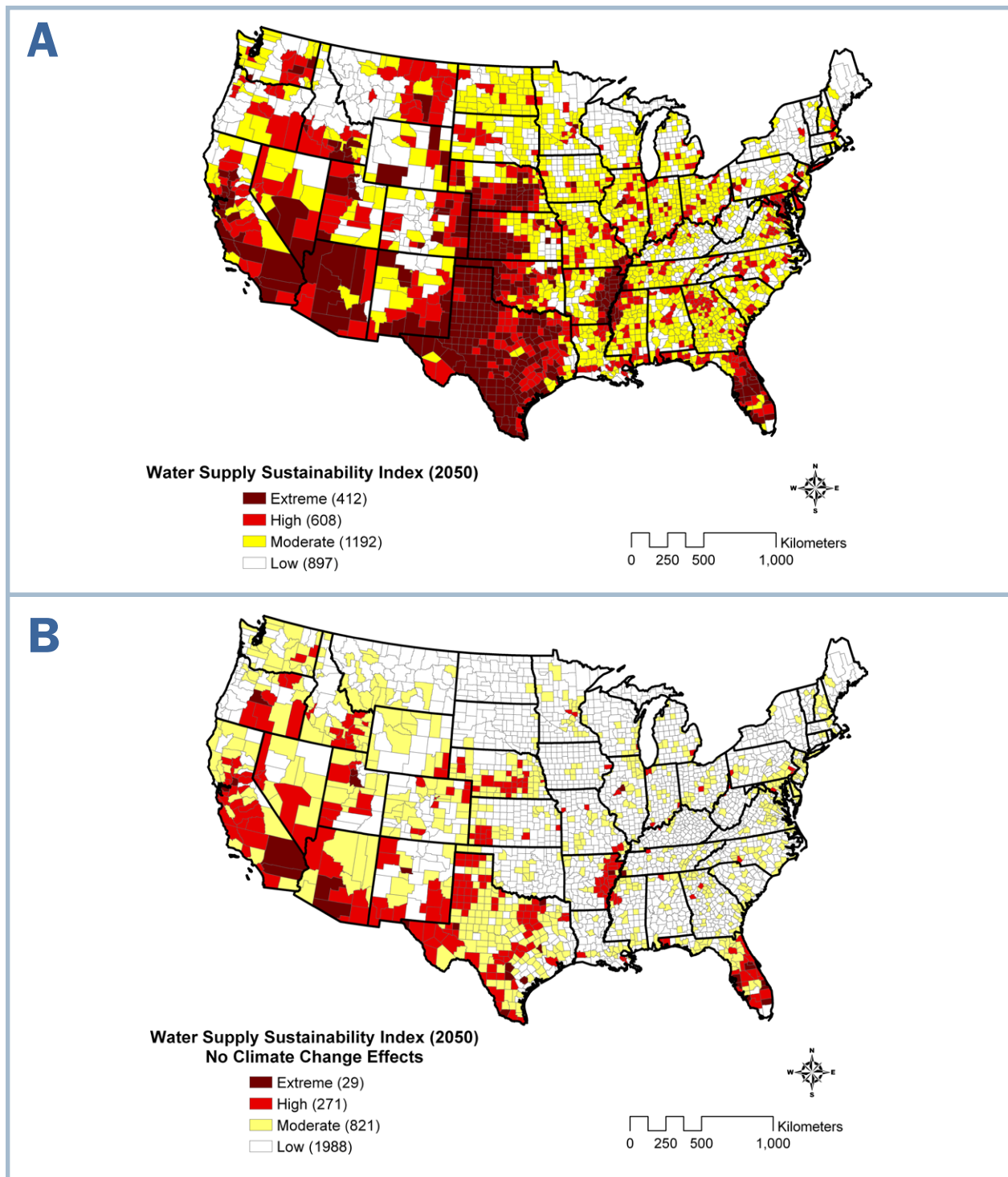
Figure 17. Water Supply Sustainability Index in 2050, (a) with available precipitation computed using projected climate change, and (b) with available precipitation corresponding to 20th century conditions, i.e., 1934-2000. The risks to water sustainability are classified into four categories from Extreme to Low. The numbers in parentheses are the numbers of counties in each category.

Conclusions

The analysis presented in this work used a combination of publicly available data on current water use and future trends in population and energy demand to estimate future water withdrawal requirements under business as usual conditions, and to relate this to renewable water availability under future climate conditions. Water resources constraints differ from region to region, and include concerns about growth in demand, insufficient storage to tide over low rainfall periods, and over-extraction of groundwater. In many regions of the U.S., where some of these constraints are apparent—such as areas in the Southwest, and over the Ogallala and Edwards Aquifers—climate change is one more factor to contend with. To address this multifaceted aspect of water sustainability, an index was developed to help rank the relative risk of different regions from one or more of these factors. Broad scale impacts to water resources that may be anticipated have been addressed in previous work (e.g., Gleick, 1989; Jacobs et al., 2001; Bates et al., 2008). This analysis provides a quantitative and region-specific assessment of the nature of impacts that might be expected across the United States. The maps produced as part of this work are based on fairly straightforward and easily replicable metrics that represent different aspects of water withdrawal and use.

The projected climate changes by 16 GCMs show significant variations in predicted precipitation, although temperature was projected to increase by all climate models. Mean changes in annual precipitation projected by the climate models show decreases in precipitation in many regions of the U.S., including areas that may currently be described as water-short. Projected changes in water demand for the period of 2005 to 2050 are generally at a scale of 0.1 inches, mostly as increases, while projected changes in available precipitation are at a scale of 2.5 inches, often as decreases. Therefore, the higher ratios of water demand as a fraction of available precipitation projected for 2050 are largely a result of changes in available precipitation. The projected changes in available precipitation are due to both changes in precipitation and increased PET. Projected changes in PET due to climate change are generally 4 to 5 inches/yr, with areas in the South showing 5 to 6 inches/yr increases in PET.

From this analysis, it appears highly likely that climate change could have major impacts on the available precipitation and the sustainability of water withdrawals in future years under the business-as-usual scenario. Based on an index compositing multiple metrics, we found that water supplies in 70% of counties in the U.S. may be at some risk to climate change, and approximately one-third of counties may be at high or extreme risk. The geographic extent of potential risk to water supplies is greatly increased when climate change is considered than when 20th century temperature and precipitation are used. This calculation indicates the increase in risk that affected counties face that water demand will outstrip supplies, if no other remedial actions are taken. To be clear, it is not intended as a prediction that water shortages will occur, but rather where they are more likely to occur. As a result, the pressure on public officials and water users to creatively manage demand and supply--through greater efficiency and realignment among competing uses, and by water recycling and creation of new supplies through treatment--will be greatest in these regions.

The maps produced in this work can be used in different ways. They provide a large-scale overview to help assess the extent of water resources impacts that are associated with future climate change, and to identify regions that are most likely to be affected. They are also a starting point for more detailed mechanistic water budget analysis at a localized

scale, such as that of a city or water district, or a specific watershed. The metrics computed in this work are for a single business-as-usual scenario on the growth side, albeit one that is plausible. It is expected that more detailed analysis will consider and perhaps identify alternative region-specific growth trajectories that are more likely to be sensitive to anticipated climate change. These analyses can serve as the foundation for developing regional-scale alternatives for adaptation, such as modification of withdrawals, changing water use efficiency in different sectors, creating new supplies through technologies such as desalination, or creating more storage to address potentially greater year-to-year variability in precipitation.

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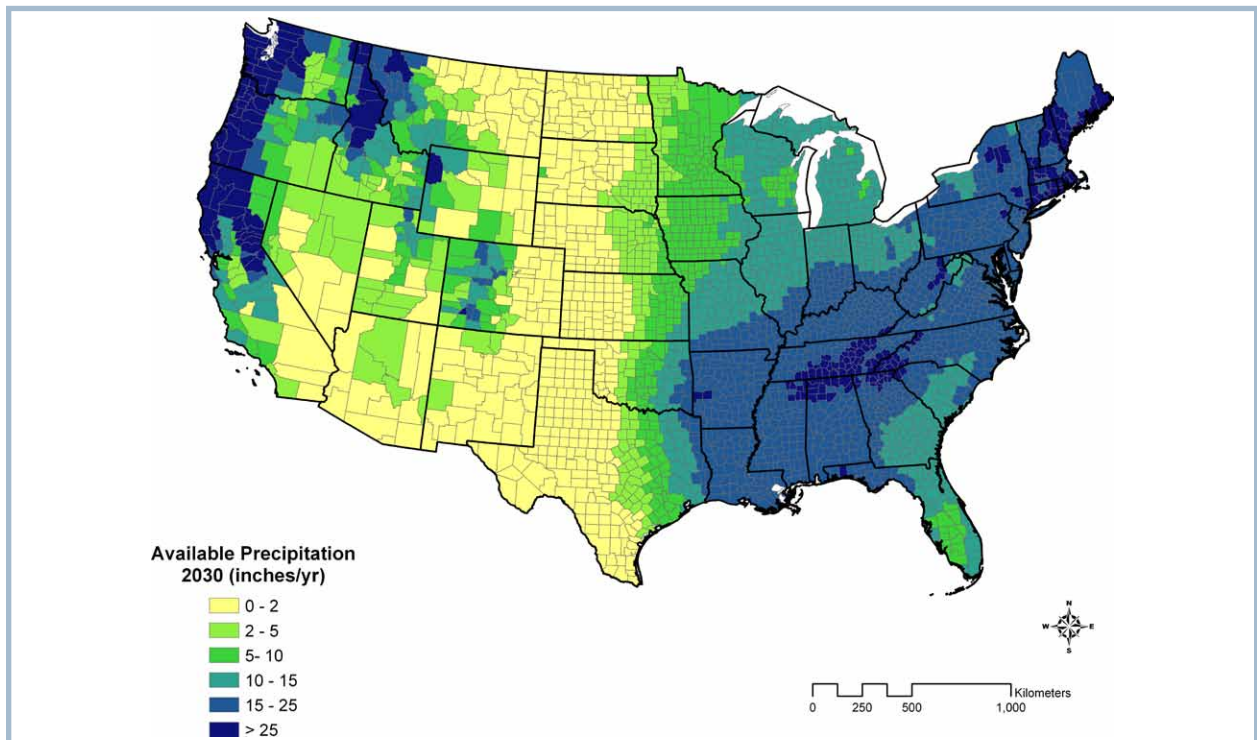
Appendix: Maps for 2030

Figure A-1. Projected available precipitation in 2030 aggregated to the county level, based on the 50th percentile of projected precipitation by climate models (ensemble of 16 GCMs).
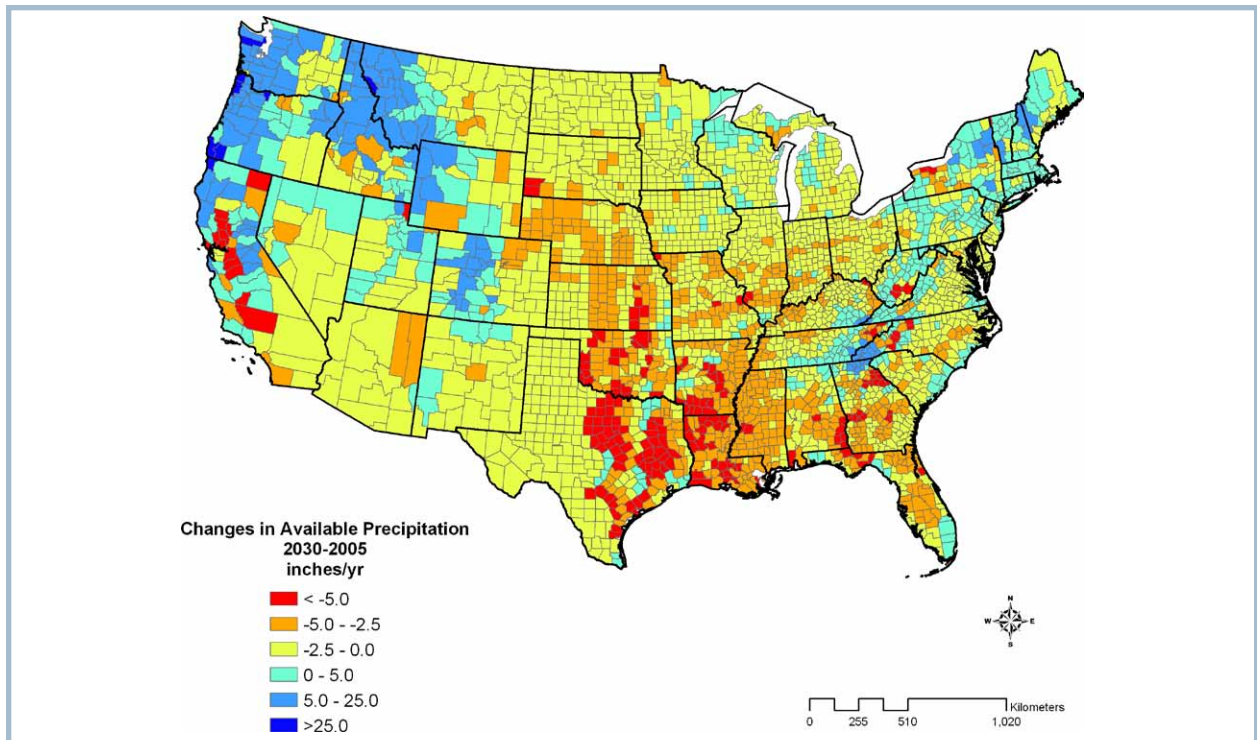
Figure A-2. Changes in available precipitation from 2005 to 2030 in inches/yr. 2030 values are based on an ensemble of 16 GCMs and represent conditions between 2020 and 2039.
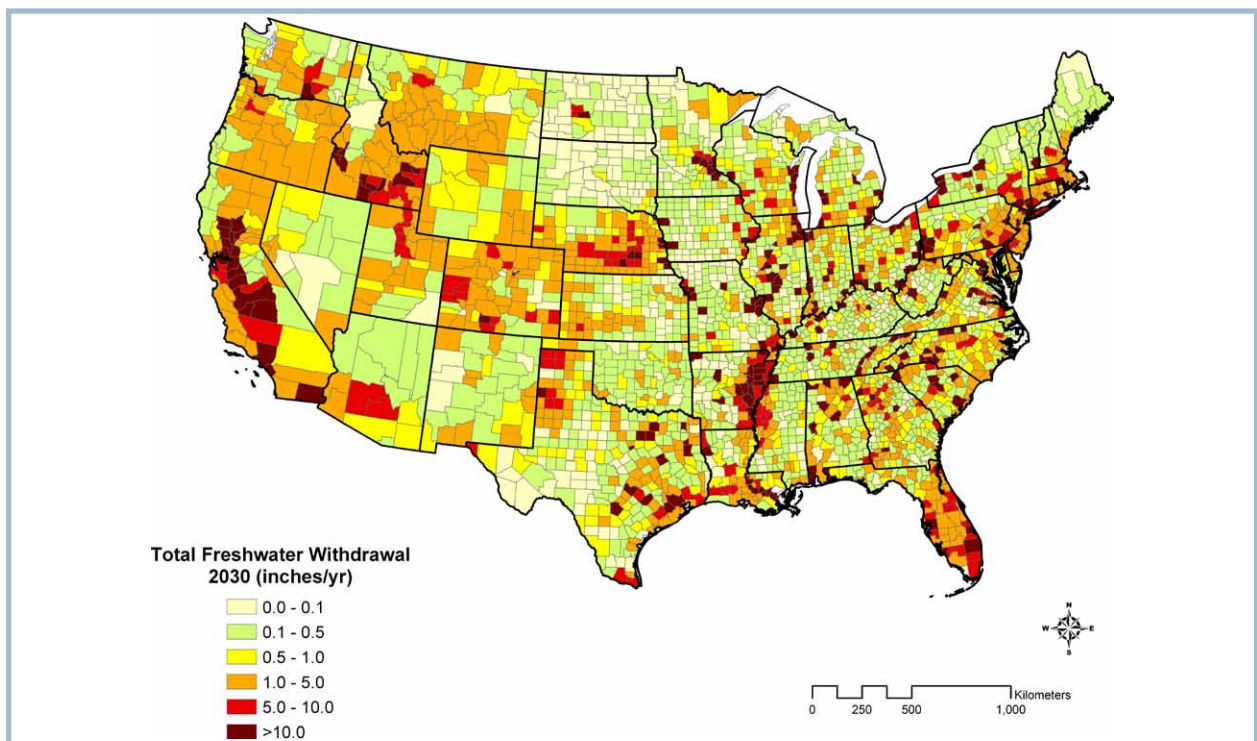

Figure A-3. Projected total freshwater withdrawal in 2030 (inches/yr). The 2030 values are based on population growth and increased electric generation capacity, and assuming water use rates for domestic use at 2005 levels, albeit varying by county, and new cooling water use at 500 gallons/ Megawatt-hour. Withdrawals for other sectors are assumed to remain at their 2005 levels.
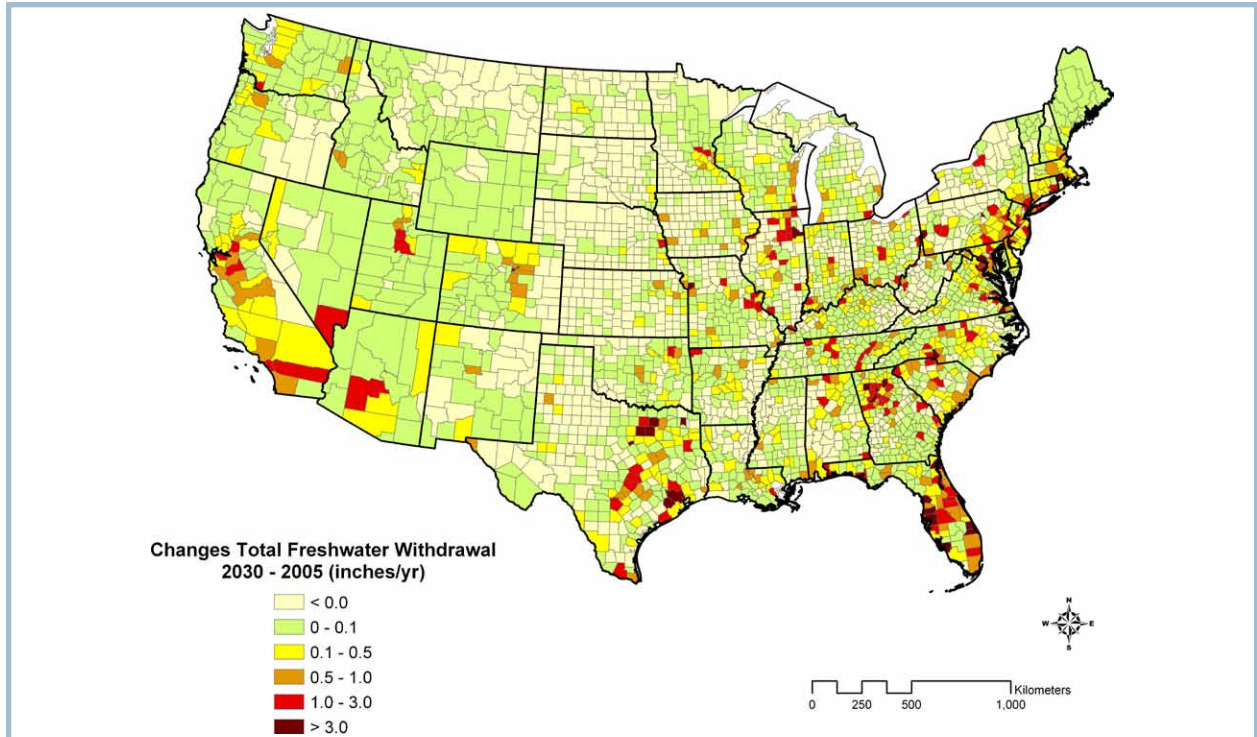
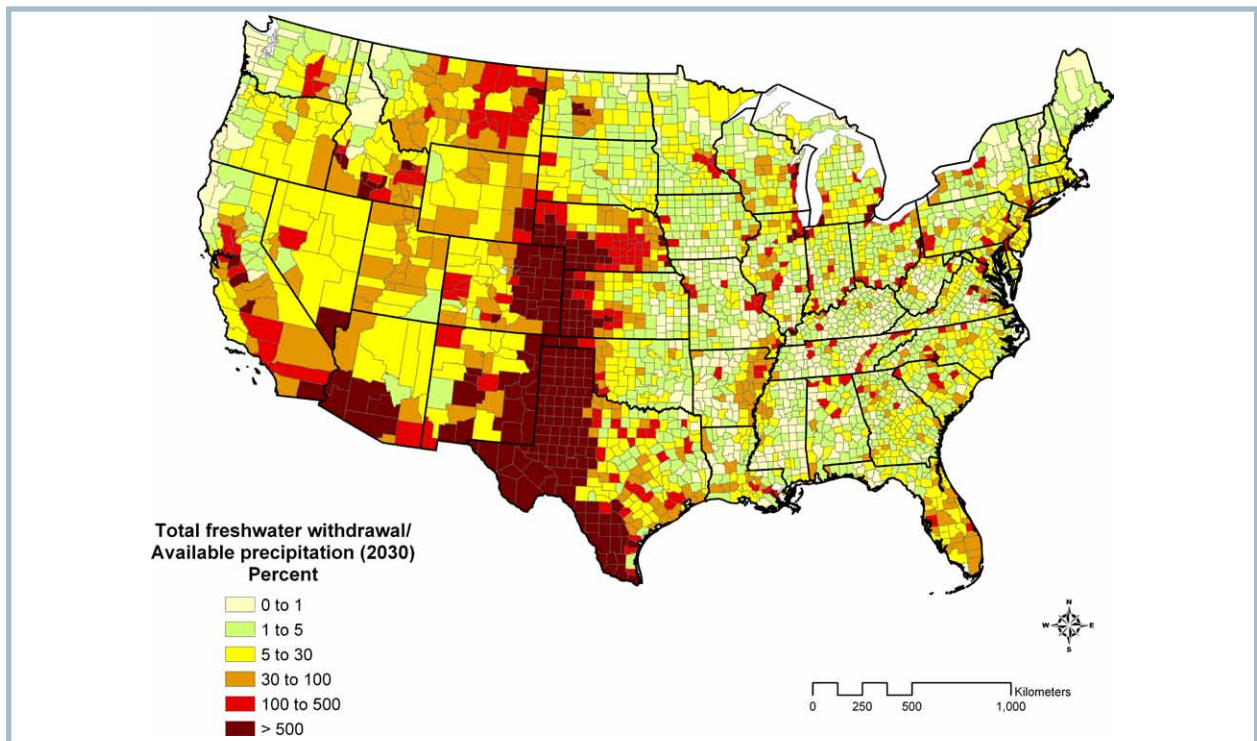Figure A-4. Changes in total freshwater withdrawal from 2005 to 2030 (inches/yr)

Figure A-5. Projected total water withdrawal as percent of available precipitation in 2030. 2030 values are based on an ensemble of 16 GCMs and represent conditions between 2020 and 2039.
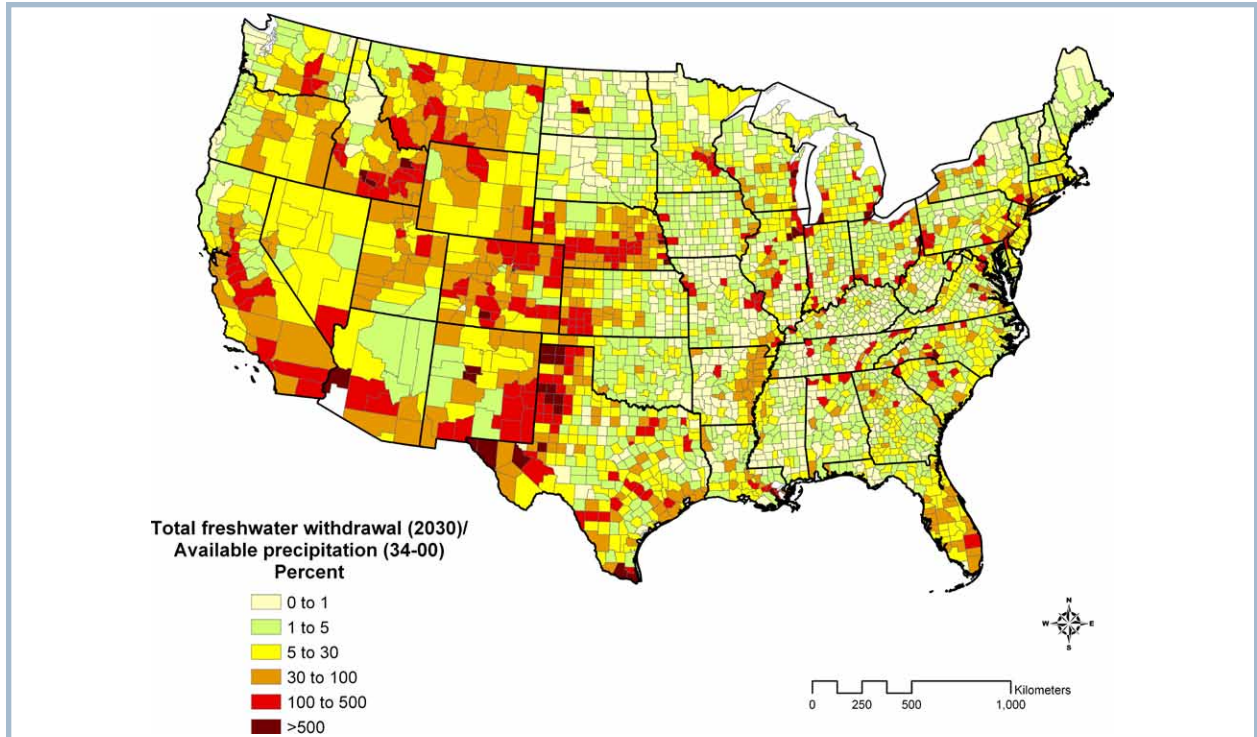
Figure A-6. Total freshwater withdrawal in 2030 as percent of historical (1934-2000) total available precipitation.