State Water Resources Control Board
Hearing Name IID Transfer - Phase 2
Exhibit 65
For Ident: ____ In Evidence: ____

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STATE WATER RESOURCES CONTROL BOARD

STATE OF CALIFORNIA

IMPERIAL IRRIGATION DISTRICT and SAN DIEGO COUNTY WATER AUTHORITY,

Petitioners.

EXPERT QUALIFICATION AND WRITTEN TESTIMONY OF RODNEY T. SMITH IN SUPPORT OF IID-SDCWA JOINT LONG-TERM TRANSFER PETITION [PHASE II]

WRITTEN TESTIMONY OF RODNEY T. SMITH

1. My name is Rodney T. Smith, and I am the Senior Vice President of Stratecon Inc. My business address is 2335 West Foothill Blvd., Suite 11, Upland, California. The following testimony is provided under oath, as specified at the end of this document.

A. Professional Background

2. My professional background and qualifications are provided in my Phase I Declaration, which is incorporated here by this reference.

B. IID Engagement

3. Because a number of environmental groups have urged the Imperial Irrigation District ("IID") to consider fallowing as a conservation alternative, the IID engaged me to study the effects of fallowing on the economy in the Imperial Valley. The rest of this testimony is the result of my analysis, and contains my opinions on the subject.

C. The Economic Effects Of Fallowing In The Imperial Valley

4. The proposed long-term water conservation and transfer agreement between IID and the San Diego County Water Authority ("SDCWA") contemplates the conservation and transfer of water through investments in on-farm conservation other than land fallowing, and through investments in system improvements. Unlike the IID-SDCWA agreement, the Quantification Settlement Agreement ("QSA"), in which 100,000 acre-feet per year could be allocated to the Coachella Valley Water District ("Coachella") and/or the Metropolitan Water District of Southern California

("MWD"), does not contain any restrictions on the method of permissible conservation. Therefore, IID could conserve water for the supplemental allocation to CVWD and/or MWD by any means available, including land fallowing.

5. IID's Board of Directors has consistently endorsed a policy against land fallowing. The Board's position reflects the concern that reduced agricultural activity would have a significant negative impact on economic activity in Imperial County in terms of both lost income and reduced employment. The IID Board is willing to use conserved water transfers to assist other communities in addressing their pressing water supply needs and to help California live within the state's basic 4.4 million AF annual apportionment of Colorado River water, provided that such agreements strengthen, not diminish, the vitality of the economy in Imperial Valley. Consistent with the Board's long-standing policy against land fallowing, IID specified in the proposed water transfer agreement with SDCWA that land fallowing would not be a permitted method for water conservation under its contracts with participating landowners to conserve water on-farm.[1]

6. Recently, there has been discussion suggesting that perhaps IID's Board should reconsider its policy against land fallowing. Generally speaking, the debate centers on perceived differences in the environmental consequences of conserving water by methods other than land fallowing, versus land fallowing. Believing that conservation by land fallowing has less

[1] See Article 14.2 of the IID-SDCWA proposed water transfer agreement.

environmental impacts than conservation by means other than land fallowing, some claim that IID may want to use fallowing as a conservation alternative.

7. There are many dimensions to the question of whether IID should change its fallowing policy. This study addresses the economic dimension. What are the economic consequences of fallowing, versus the current proposed transfer? After my review of the subject, I have concluded that the switch to a program based on land fallowing would:

a) sacrifice a significant economic stimulus to the local economy in the form of the current "no fallowing" proposed agreement with SDCWA; and

b) impose a significant economic loss to the local community.

8. From an economics perspective, the switch to land fallowing would constitute a loss in local income worth hundreds of millions of dollars over the contemplated term of the proposed IID-SDCWA transfer and the QSA, and a long-term loss of between 1,000 and 2,000 jobs.

D. <u>Cropping Practices In The Imperial Valley</u>

9. A meaningful economic analysis of land fallowing must take into account cropping practices in the Imperial Valley: (1) the intensity of farming, and (2) the natural rotation of crops on any specific parcel of land.

10. *Intensity of Farming*. Due to its favorable climate and the seniority of IID's water right, Imperial Valley agriculture is a year-round business. Generally speaking, irrigable acreage remains in production other than the time required for temporary

idling of land due to good farming practices. However, the intensity of farming varies annually in the Imperial Valley. A common measure of farming intensity in the Imperial Valley involves the amount of acreage "double-cropped" (i.e., a vegetable crop grown in the fall or a field crop in the winter, and a different vegetable crop or sudan grown in the spring). Reflecting this practice, IID staff maintains records on the amount of acreage on which crops are harvested ("gross acres") and the acreage where more than one crop is grown in a year ("double-cropping").

11. The prevalence of double-cropping varied considerably in the last decade (see Attachment 1).[2] During 1990-2000, the share of acreage double-cropped averaged about 18%, reaching a high of 22.9% in the year 1998 and a low of 13.4% in the year 1993. The intensity of farming reflects economic conditions in crop markets. Strong market conditions generate more double-cropping due to the increased economic return to farming. Weak market conditions yield less double-cropping due to the reduced economic return to farming.

12. The ability to double-crop in the Imperial Valley reflects the pattern of planting and harvesting dates (see Attachment 2). Alfalfa, accounting for the largest acreage in Imperial Valley, is a year-round crop usually grown for a period of three to four years. Double-cropping involves rotations among the other field crops and vegetables where the timing of planting and harvesting are compatible. For example, an onion crop could

[2] Share of acres double-cropped = acres double-cropped/net acres, where net acres = acres harvested - acres double-cropped. Data provided by staff of Imperial Irrigation District.

be planted in October and harvested in May, followed with a sudan crop planted in June and harvested in September. A carrot crop could then be planted in December and harvested the following May. The land could then be temporarily idled after May until alfalfa was planted the following September.

13. *Natural Rotation of Crops on A Given Field.* Another important aspect of farming in the Imperial Valley is that all crops are ultimately grown on virtually all lands. In other words, farming on most fields has a seven-year cycle in which alfalfa is grown for three to four years, and then a rotation of vegetable and other field crops are grown for the remainder of the cycle.[3] Attachment 3 provides a pro forma of cropping patterns for eight land parcels over a common seven-year period. Parcel A, for example, is finishing its hay cycle in years 1-3. In the middle of year 3, it starts rotating into fall vegetables (lettuce), another field crop (cotton), and subsequently other vegetables (tomatoes) and another field crop (wheat).[4] After three years of rotating among vegetable and field crops, preparation begins for the next three to four-year cycle of alfalfa hay. In any given year, the other parcels are in different stages of their crop rotation cycle. However, over the long-term, alfalfa hay is grown on each parcel for a portion of

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[3] Based on conversations with growers in the Imperial Valley and examination of a sample of cropping histories for a random sample of parcels assembled by IID staff.

[4] The field size of crops varies due to differences in capital investment and working capital requirements, labor intensity, management requirements and other factors. Therefore, not all acres in a parcel are planted in each crop.

the time, and other field crops and vegetables are grown for the remainder of the time.

E. Income And Job Losses From Land Fallowing

14. A land fallowing program would conserve water by not growing crops. The direct economic impact of land fallowing would be the farming income lost due to not growing crops. However, there would be two additional economic impacts. First, there would be an "indirect effect" due to the lost income that would have been earned from the sale of goods and services for the growing of crops on fallowed land. Second, there would be an "induced effect" due to the additional economic activity that would be sacrificed from the income losses from the direct and indirect effects from land fallowing. Offsetting these economic losses, of course, would be the economic benefit from the contract payments IID would receive under the proposed transfer agreements with SDCWA and Coachella/MWD.

15. The environmental review of IID's proposed water conservation and transfer agreements by CH2M HILL includes a socioeconomic assessment of conservation activity based upon on-farm conservation other than land fallowing, system improvements, and land fallowing.[5] The socioeconomic assessment in the Draft EIR/EIS estimates the impact on the local economy of the contract payments under the proposed agreements with the SDCWA and Coachella/MWD, and alternative conservation methods

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[5] See Appendix G, Socioeconomics, in "Imperial Irrigation District Water Conservation and Transfer Project" Draft Habitat Conservation Plan, Draft Environmental Impact Report/Environmental Impact Statement, State Clearinghouse No. 99091142, filing date January 18, 2002 (hereinafter cited as "Socioeconomics").

such as on-farm conservation (other than land fallowing), system improvements, and land fallowing. On-farm conservation other than land fallowing uses tailwater recovery systems as "benchmark" technology to represent the economic impact of non-fallowing methods.[6] System improvements include installing up to 14 lateral interceptor systems and constructing up to 26 surface or subsurface seepage recovery systems.[7] Conservation by land fallowing assumes that crops not grown would reflect the mix of crops grown in years 1987 to 1999.[8]

16. A switch in IID's policy to land fallowing would represent a sacrifice of significant economic benefits from a non-fallowing program and the suffering of significant economic losses.[9] A non-fallowing program based on system improvements and installation of tailwater recovery systems would increase annual personal income in Imperial County by about $20 to $25 million ('01$) per year over the term of the QSA (see Attachment 4).[10] Of this gain, about 75% of the increase in income would be for employee compensation and 25% would be for the income earned by proprietors of businesses in Imperial County. Since a program

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[6] *Ibid.*, p. G-6.

[7] *Ibid.*

[8] *Ibid.*, at p. G-12 to G-13.

[9] Estimate of the economic impact of a non-fallowing and fallowing programs based on Proposed Project B and Proposed Project D analyzed in Socio-economics, supra note 4, in the EIR/EIS. Proposed Project B is based on system improvements and on farm conservation with tailwater recovery systems. Proposed Project D is based on land fallowing.

[10] Estimated impact on employee compensation and proprietor's income provided by CH2Mhill, the firm that prepared the environmental review for Imperial's proposed water conservation and transfer agreements.

based on methods of conservation other than land fallowing requires investments in on-farm conservation and system improvements, a non-fallowing program generates an immediate economic stimulus to the local economy.

17. In contrast, a program based on land fallowing would reduce annual personal income in Imperial County. That is, the economic losses from the reduced agricultural activity exceed the economic benefits of the contract payments contemplated under the proposed agreements with the SDCWA and Coachella/MWD. During the first six years when the quantity of water conserved is relatively low, annual personal income losses would be $5.0 million ('01$). Thereafter, the annual income losses would steadily grow until they reach $30.0 million ('01$) as land fallowing expands with the magnitude of IID's delivery obligations under its proposed agreements with the SDCWA and Coachella/MWD. Of these losses, about 60% represents reduced employee compensation and 40% reduced income earned by proprietors of businesses in Imperial County.

18. From an economics perspective, the income lost from a switch in IID policy against land fallowing equals the difference between the income losses caused by land fallowing and the positive economic stimulus that would be acquired from funded conservation using methods other than land fallowing. By accepting a fallowing method of conservation, IID would inflict significant loss of income on the local community and forego significant economic stimulus of the local economy.

19. The economic loss from the switch to land fallowing is significant and grows over time. For the initial six years, when

the scale of land fallowing is relatively small, the annual economic loss from a switch to land fallowing would be $26 million ('01$). As the scale of land fallowing expanded to meet IID's delivery obligations under the contemplated agreements with the SDCWA and Coachella/MWD, the annual economic losses from land fallowing would approach $50 million ('01$).

20. The switch to land fallowing would also reduce employment in Imperial County (see Attachment 7).[11] Conservation based on non-fallowing methods would create between 700 and 900 jobs. In contrast, a program based on land fallowing would eliminate almost 300 jobs by the year 2007 and a total 1,400 jobs long-term. Therefore, a switch to land fallowing would eliminate almost 1,000 jobs short-term and over 2,000 jobs long-term (adding together the effects of fallowing and the effects of losing the benefits of proposed non-fallowing conservation).

F. Economic Impacts Of A Targeted Fallowing Program

21. Some individuals have expressed the view that a program of land fallowing can target specific crops in order to reduce the economic impacts of land fallowing.[12] From this perspective, a fallowing program would only impact the so-called low-valued, high water-use crops. Under current economic conditions, the most common candidate mentioned for a targeted fallowing program is alfalfa hay.

22. Given the long-term nature of the contemplated transfer agreements, any attempt to target crops in a land fallowing

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[11] Employment impacts taken from "Socioeconomics," *supra* note 5, Table G-7.

[12] Based on conversations with U.S. Bureau of Reclamation, Salton Sea Authority, and other water agencies.

program does not take into account a fundamental fact about agriculture in the Imperial Valley: crop rotation on fields. As discussed above, virtually all crops are grown on all fields. Therefore, any fallowing over the representative seven-year cycle of crop rotation, let alone over a term of up to 75 years, would sacrifice the entire basket of crops that would have otherwise been grown.

23. Proponents of targeted fallowing have argued that only alfalfa hay crops would be fallowed, because farmers would rotate which lands they own that they would choose to fallow in any year. For example, suppose that a farmer owned both Parcel A and Parcel B in the pro forma of annual cropping patterns (see Attachment 3). If this were the case, the farmer would fallow Parcel A in year 1, 2, and 7 and would fallow Parcel B in year 4, 5, and 6 when he would have otherwise grown alfalfa hay.[13] Or, if the planned rotation of crops did not "match up" as they do in this example, the farmer could change his crop rotation pattern so that he could target alfalfa hay.

24. This argument misses critical points about farming practices and economics. First, alfalfa hay is in the crop rotation in Imperial Valley because, in addition to its economic return, it is also necessary for proper long-term resource management. Vegetables are not grown on a field year in and year out because the land could not sustain its yields.[14] Crop

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[13] The rules of the program would determine whether he could fallow Parcel A for a portion of year 6 or fallow Parcel B for a portion of year 3 when he would have been otherwise planting alfalfa after growing wheat.

[14] Based on conversations with growers in the Imperial Valley.

rotation is a necessary element of maintaining the productivity of land in the Imperial Valley. Second, changing crop rotations is not without economic cost. Planned crop rotations reflect economic conditions, investment decisions and risk diversification. Changing crop rotations on land means less profitable rotations, less effective means of risk diversification, and less effective resource management. Without any evidence from the actual experience of a long-term land fallowing program, there is little basis to know whether the economic and resource management considerations identified above would enable a long-term fallowing program to target specific crops. Moreover, even if adjustments in crop rotations can accommodate the targeting of a specific crop, the cost considerations discussed above would have to be considered in a complete economic analysis of the program.

25. Whether or not a fallowing program can target alfalfa hay will have a material impact on the economic losses from land fallowing (see Attachment 8). If a fallowing program sacrifices the full crop mix in Imperial Valley (as assumed in the Draft EIR/EIS environmental review), then each 10,000-acre reduction in harvested acres reduces annual employee compensation by $2.7 million ('01$), and annual proprietor income by $2.0 million ('01$), for a total loss of annual local income of $4.7 million ('01$). A total of 259 jobs would be lost for each 10,000-acre reduction in harvested acres. In contrast, if the program could successfully target alfalfa hay, the income and job losses would be substantially smaller: lost annual employee compensation would be $0.6 million ('01$), annual proprietor income $1.0 million

('01$), total annual local income $1.6 million ('01$), job losses 140 per 10,000-acre reduction in harvested acres. The difference in the economic impacts between a non-targeted and a targeted fallowing program reflect the diversity among crops in their purchases of goods and services needed to grow crops, including their labor intensity.

26. Whether a fallowing program can target alfalfa has a material effect on the economic impact of fallowing, but does not change the fundamental conclusions reached above: (1) the economic losses from fallowing exceed the economic benefits from the current contract payments IID would receive under the proposed agreements with the SDCWA and Coachella/MWD, and (2) the shift toward land fallowing would impose a significant economic burden on the local economy. Consider the impact of a switch to land fallowing on annual local income in Imperial County (see Attachment 9).[15] The local income lost from fallowing only alfalfa hay is about 1/4th to 1/5th the income lost from fallowing the mix of all crops. However, the local economy nevertheless sustains annual income losses, starting at $1.5 million ('01$) and growing to $6.7 million ('01$). By sacrificing the significant economic stimulus from the proposed non-fallowing program, the annual income lost from the switch to a land fallowing program remains significant, ranging from $20 million ('01$) to $30 million ('01$).

[15] Estimates based on an adjustment of the income losses from fallowing reflecting the differences in the impact of fallowing alfalfa hay versus the entire crop mix. Adjustment based on the differences in the income multipliers in Attachment 8.

27. Similarly, the switch to land fallowing would cost the local community jobs (see Attachment 10).[16] The jobs lost from fallowing alfalfa hay are only about 1/3rd of the amount of jobs lost from fallowing the entire crop mix in the Imperial Valley. However, by sacrificing the significant economic stimulus from a non-fallowing program, the jobs lost from the switch to land fallowing remain significant. In the short term, the jobs lost from the switch to fallowing alfalfa only are still about 80% of the jobs lost from the fallowing of the entire crop mix in the Imperial Valley. In the long run, the jobs lost from the switch to fallowing alfalfa only are about 50% of the jobs lost from the fallowing of the entire crop mix.

G. Economic Valuation Of The Switch To Land Fallowing

28. Given the long-term nature of the proposed transfers, the annual income losses from land fallowing would be incurred over many years. To place an economic value on the losses, it is standard practice to calculate the present value of the annual losses over the term of the proposed agreements.

29. The interest rate used in the calculation of present value is a critical assumption. The analysis below uses interest rates equal to the interest on 10-year treasury notes (a standard benchmark of long-term interest rates), plus a default risk premium.[17] A default risk premium reflects the fact that the transfer agreements are subject to a risk of early termination.

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[16] Estimates based on an adjustment of the job losses from fallowing reflecting the differences in the impact of fallowing alfalfa hay versus the entire crop mix. Adjustment based on the differences in the employment multipliers in Attachment 8.

[17] The current interest rate on 10-year treasury notes is 5.27%.

I consider the implications of six alternative assumptions about early termination risk: none, and annual probabilities of early termination ranging from 1% to 5%. The assumptions reflect significant risk of early termination (see Attachment 11). The expected duration of the 75-year transfer agreements ranges from 20 years to 53 years under the range of early termination risk considered below.

30. *Economic Value of Local Income Created by Non-Fallowing.* The economic value of income generated by a non-fallowing program is worth hundreds of millions of dollars (see Attachment 12.)[18] If there were no risk of early termination, the economic value of local income generated by a non-fallowing program would exceed $700 million ('01$). At a moderate risk of early termination, the economic value exceeds $400 million ('01$). The economic value of the income generated by a non-fallowing program would still be almost $300 million ('01$) if the risk of early termination were so high that the expected duration of the 75-year agreements were only 20 years.

31. *Economic Value of Income Lost from Fallowing.* The economic value of local income lost from land fallowing is also

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[18] Attachment 12 provides the calculation of the present value of the annual local income generated by non-fallowing program (Attachment 4) under alternative interest rates according to the indicated assumption concerning the annual risk of early termination. The interest rate ("i") depends on the interest rate on 10-year treasury notes ("t") and the annual probability of early termination ("δ") as follows: $i = (t + \delta)/(1-\delta)$. In that the estimate of income is in inflation-adjusted dollars ('01$), the proper interest rate to use is the inflation-adjusted "real rate of interest." According to the Fisher equation in corporate finance, $(1+i) = (1+r)\bullet(1+\pi)$, where r = real interest rate and π = inflation rate. Calculations assume that π = 2.5%.

worth hundreds of millions of dollars (see Attachment 13).[19] Generally speaking, the economic value of the income lost from land fallowing under the "all crop" scenario discussed above is about the same magnitude as the income that would be generated by a non-fallowing program. The economic value of the income lost from fallowing only alfalfa is materially less. Nevertheless, even under this most favorable assumption concerning land fallowing, the local community sustains significant economic losses from fallowing.

32. Unlike the case of a non-fallowing program that provides a positive economic stimulus to the local community, a fallowing program inflicts losses that would inevitably lead to an out-migration of economic activity from Imperial Valley. Workers who lose their jobs will search for a new job and eventually find alternative employment. Proprietors may exit their current business and relocate elsewhere, either in a new location or line of business, or become an employee of another proprietor. As such adjustments occur, the income losses of individuals, either as employees or proprietors will be "mitigated." However, any such mitigation of the individual losses would not change the fact that the income generated in the local economy of Imperial Valley would be permanently reduced over the term of the transfer agreements.

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[19] Attachment 13 provides the calculation of the present value of the annual local income lost by land fallowing under two assumptions about the crops fallowed: the "all crop" scenario included in the environmental review of IID's water conservation and transfer program (Attachment 5) and the alternative scenario of alfalfa only (Attachment 6). See *supra* note 18 for discussion of the interest rates used in the calculation.

33. Given that agriculture is the foundation of the local economy in Imperial Valley, the erosion of the economic base due to land fallowing is much like the impact of the closing of a manufacturing plant in a community dependent on a key employer. When a plant closes, former employees migrate. However, they leave in their wake an economically weakened community.

34. The income losses from land fallowing are undoubtedly understated by the above discussion. By their very nature, the economic models used to estimate income losses do not, because they cannot, address the prospect that large-scale land fallowing will have an adverse effect on the agricultural support industries, which in turn reduces the economic viability of remaining agriculture. Support industries that lose business from fallowing may be unable to serve as effectively the remaining agricultural operations. As a result, the income of continuing agricultural operations may very well suffer losses. The magnitude and impact on the local economy of such losses have not been addressed here. There is no experience from long-term fallowing programs available to assess this issue. However, the experience of Mendota in the Central Valley is not encouraging, where a loss of agricultural activity seriously reduced the economic viability of the operations that remained.[20]

[20] See written testimony submitted to this proceeding by Henry E. Rodegerdts, California Farm Bureau Federation's Natural Resources and Environmental Division.

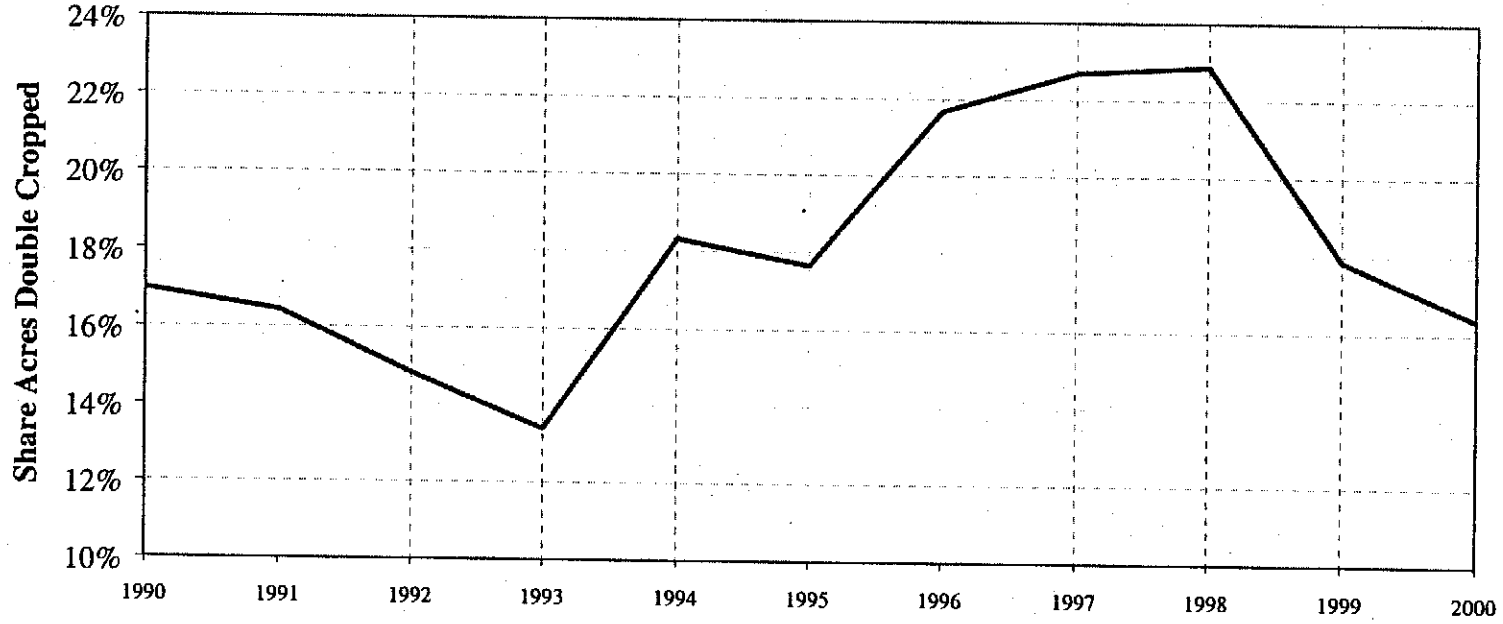
H. Conclusion

35. IID's Board has consistently advocated a policy against land fallowing precisely because land fallowing inflicts significant losses on the local economy. To that end, IID has developed its proposed transfer to SDCWA on a foundation of non-fallowing so that IID can help meet pressing water supply needs in California, provided that IID's assistance strengthens, not diminishes, the economic vitality of the Imperial Valley. A switch to land fallowing would be a reversal in a long-standing policy with severe economic consequences. The proposed contracts with SDCWA and Coachella/MWD are financially inadequate for land fallowing; fallowing would result in a significant economic loss to the local community. The switch from a positive economic stimulus of non-fallowing to the negative economic impact of fallowing represents a swing of lost income worth hundreds of millions of dollars, and a swing of reduced employment opportunities numbering between 1,000 and 2,000 jobs.

I declare under penalty of perjury under the laws of the state of California that the foregoing is true and correct. Executed on April 9, 2002, at Upland, California.

RODNEY T. SMITH

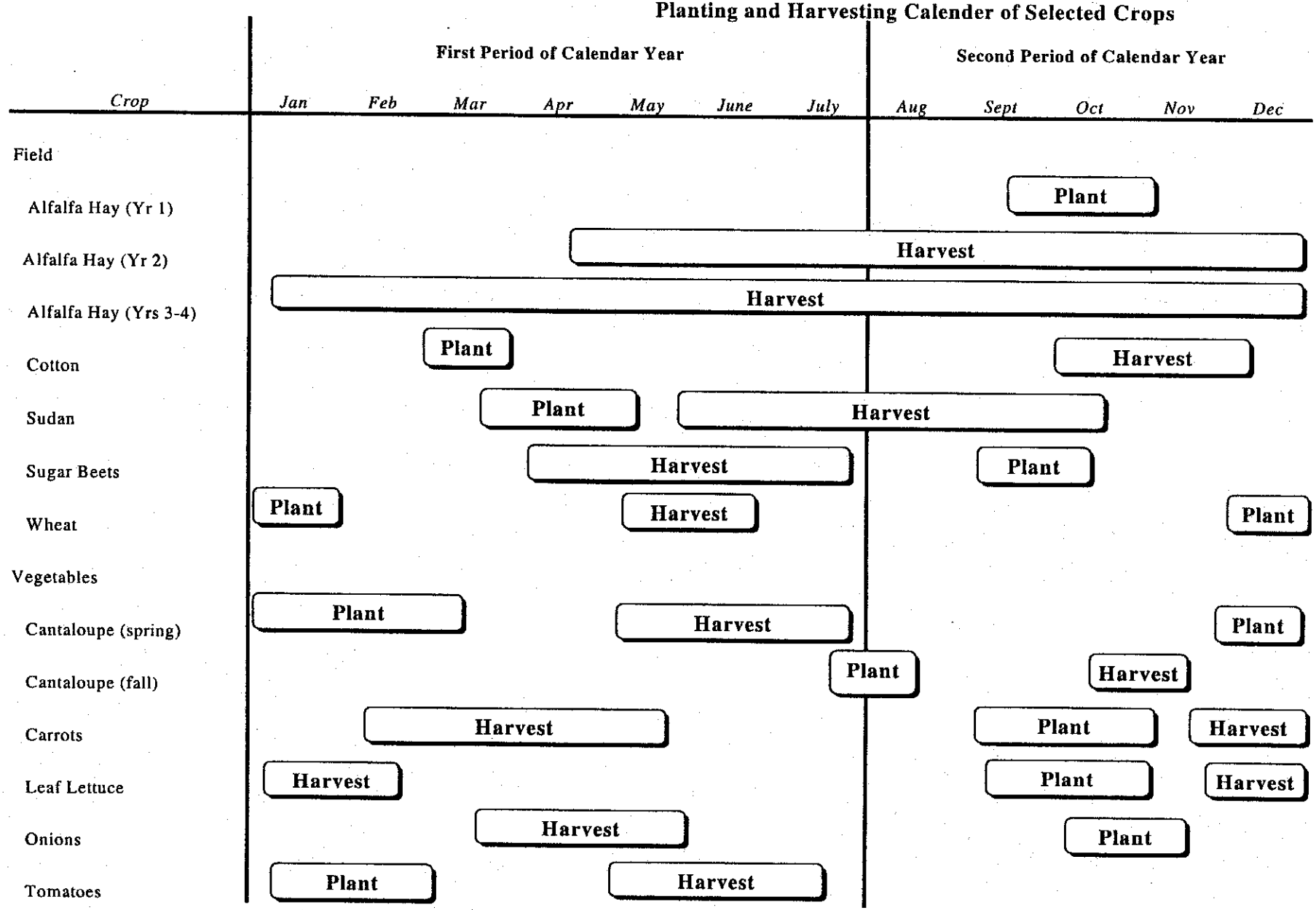
Attachment 1
Double Cropping in Imperial Valley



Source: Data on acreage provided by staff of Imperial Irrigation District

Attachment 2

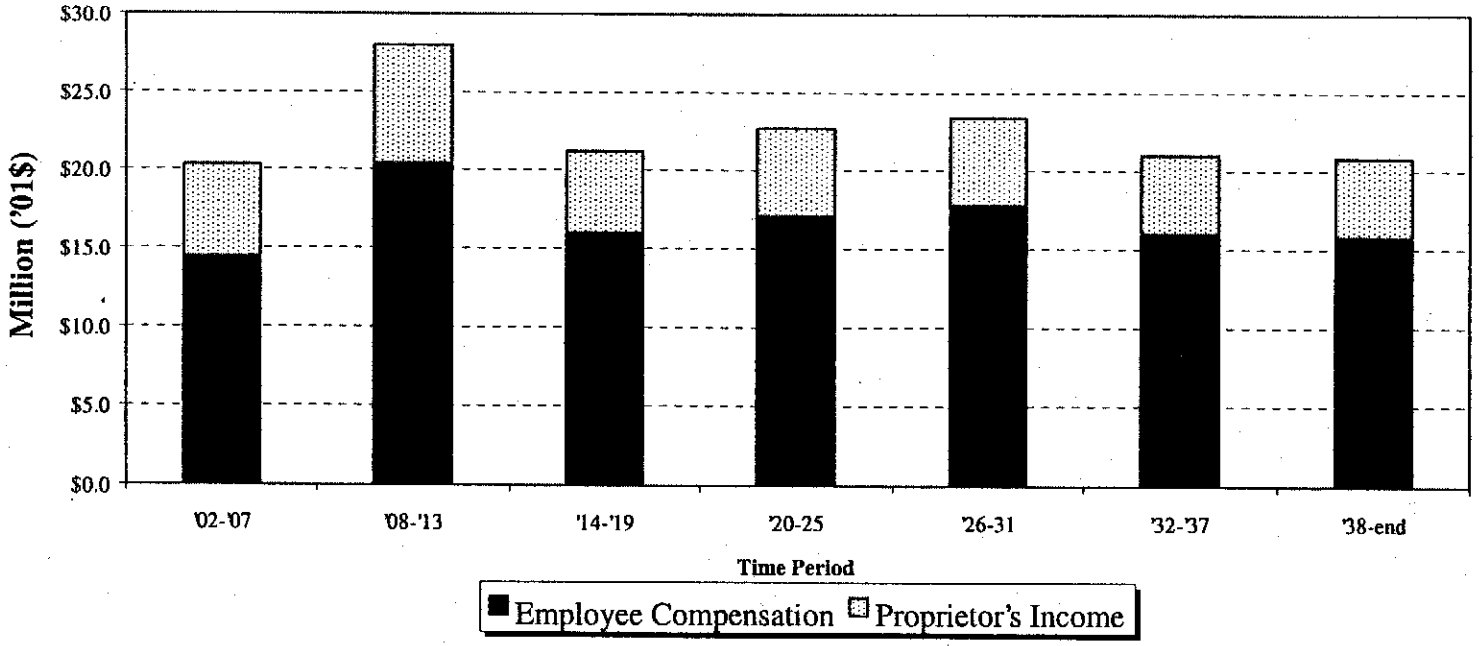
Planting and Harvesting Calender of Selected Crops



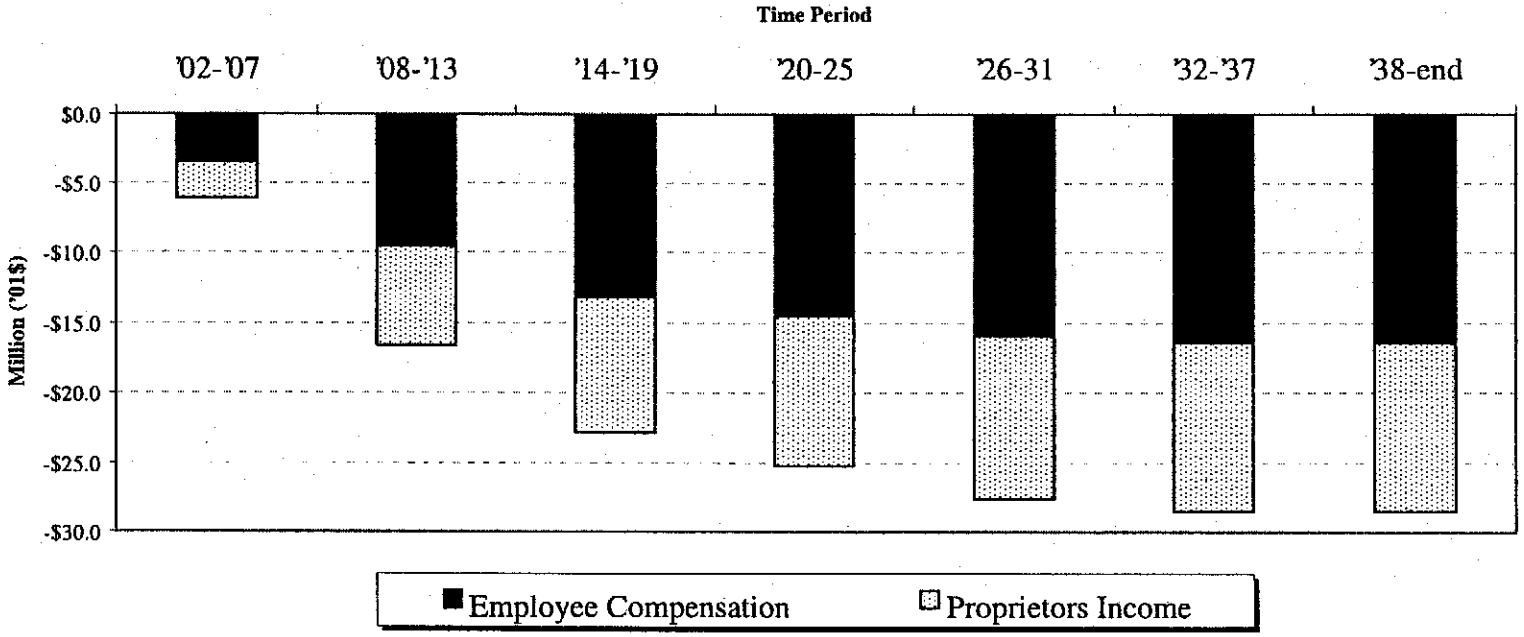
Attachment 3
Pro Forma Annual Cropping Patterns

Year	*Parcel A*	*Parcel B*	*Parcel C*	*Parcel D*	*Parcel E*	*Parcel F*	*Parcel G*	*Parcel H*
1	Hay	Sugar Beets Lettuce	Carrots Hay Planting	Hay Lettuce	Hay	Tomatoes Wheat	Lettuce Cotton	Sugar Beets
2	Hay	Lettuce Sudan Wheat	Hay	Lettuce Sudan Onions	Hay	Wheat Hay Planting	Tomatoes Wheat	Sugar Beets Carrots
3	Hay Lettuce	Wheat Hay Planting	Hay	Onions Wheat	Lettuce Sudan Onions	Hay	Wheat Sudan Onions	Carrots Wheat
4	Lettuce Cotton	Hay	Hay	Wheat Hay Planting	Onions Sugar Beets	Hay	Onions Carrots	Wheat Sudan Onions
5	Tomatoes Wheat	Hay	Tomatoes Wheat	Hay	Sugar Beets Hay Planting	Hay Lettuce	Carrots Lettuce	Onions
6	Wheat Hay Planting	Hay	Wheat Sugar Beets	Hay	Hay	Lettuce Sudan	Lettuce Sudan	Tomatoes Wheat
7	Hay	Tomatoes Carrots	Sugar Beets Cotton	Hay	Hay	Tomatoes Wheat	Tomatoes Wheat	Wheat Lettuce

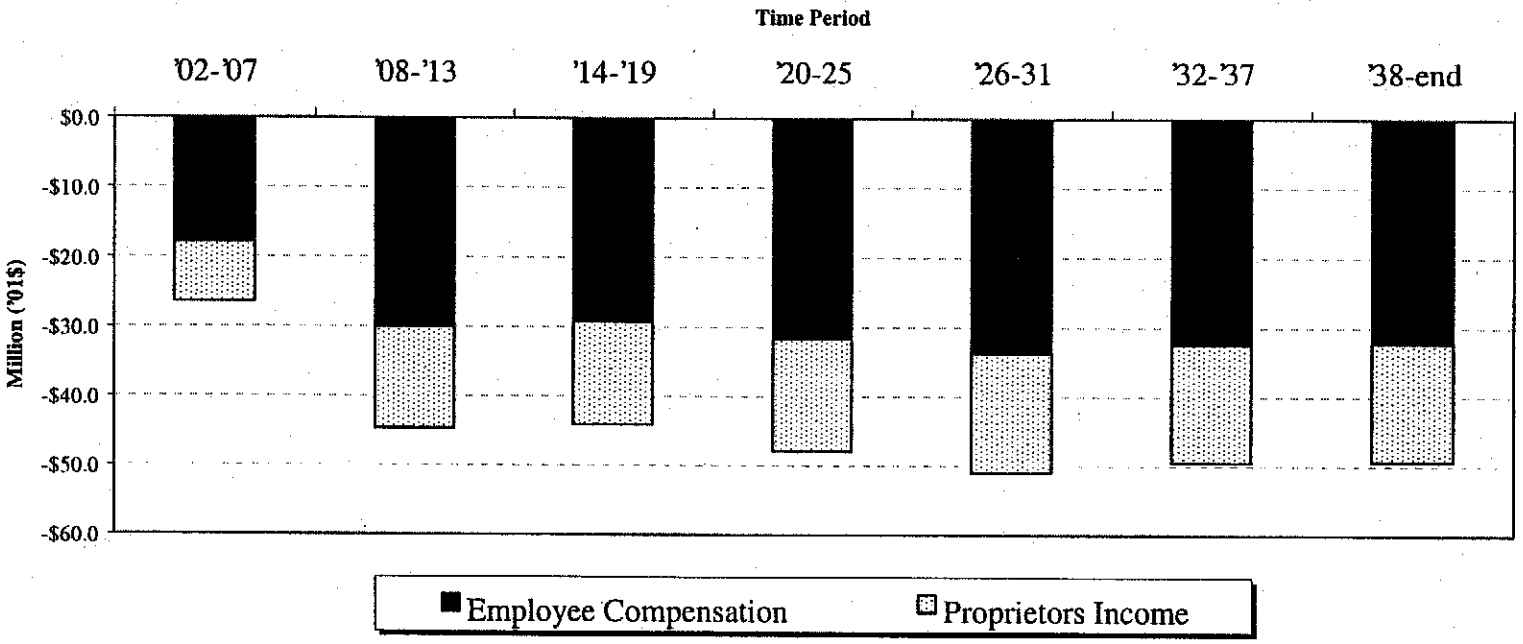
Attachment 4
Annual Income in Imperial County Created by Non-Fallowing Program



Attachment 5
Annual Income in Imperial County Lost by Fallowing Program
(Representative Crop Mix)



Attachment 6
Economic Loss from Switch to Fallowing Program
(Representative Crop Mix)



Attachment 7

Jobs Created by Non-Fallowing Conservation and Eliminated by Land Fallowing

Year	*No Fallowing*	*Fallowing*	*Impact of Fallowing*
2002-'07	650	-290	-940
2008-'13	900	-820	-1,720
2014-'19	770	-1,120	-1,890
2020-'25	910	-1,230	-2,140
2026-'31	700	-1,350	-2,050
2032-'37	730	-1,400	-2,130
2038-end	710	-1,400	-2,110

Attachment 8

Economic Impact of Land Fallowing
(per reduction of 10,000 harvested acres)

Crop Sector	*Acreage Share*	*Employee Compensation (mil '01$)*	*Proprietor Income (mil '01$)*	*Labor Income (mil '01$)*	*Jobs (number)*
Cotton	1.81%	-$2.4	-$1.4	-$3.8	-160
Food Grains	13.64%	-$0.5	-$0.5	-$1.0	-70
Hay and Pasture	50.65%	-$0.6	-$1.0	-$1.6	-140
Grass Seed	4.84%	-$0.7	-$1.2	-$1.9	-290
Vegetables	21.80%	-$9.9	-$5.3	$-15.2	-680
Sugar Beets	7.27%	-$1.6	-$2.1	-$3.7	-190
Weighted Average		-$2.7	-$2.0	-$4.7	-259

Attachment 9

Comparison of Impacts of Non Fallowing and Fallowing Programs on Annual Local Income (millions '01$)

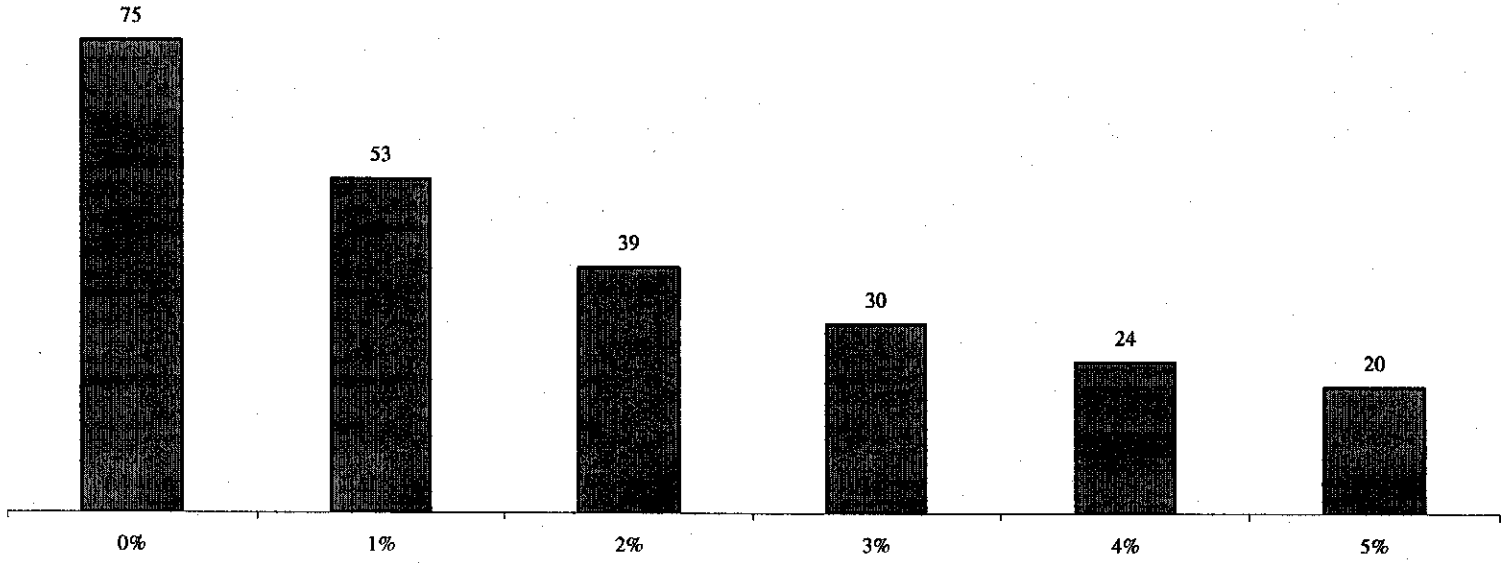
	Local Income Created by	*Local Income Lost by Fallowing*		*Income Lost from Switch to Fallowing*	
Period	*Non Fallowing*	*All Crops*	*Alfalfa Only*	*All Crops*	*Alfalfa Only*
2002-'07	$20.3	-$6.1	-$1.5	-$26.4	-$21.8
2008-'13	$28.0	-$16.6	-$3.9	-$44.6	-$31.8
2014-'19	$21.2	-$22.8	-$5.4	-$44.0	-$26.6
2020-'25	$22.7	-$25.2	-$5.9	-$47.9	-$28.6
2026-'31	$23.4	-$27.6	-$6.5	-$51.0	-$29.9
2032-'37	$21.0	-$28.5	-$6.7	-$49.5	-$27.7
2038-end	$20.8	-$28.5	-$6.7	-$49.3	-$27.5

Attachment 10

Comparison of Job Impacts of Non Fallowing and Land Fallowing Programs

	Jobs Created by	*Jobs Lost by Fallowing*		*Jobs Lost from Switch to Fallowing*	
Period	*Non Fallowing*	*All Crops*	*Alfalfa Only*	*All Crops*	*Alfalfa Only*
2002-'07	650	-290	-86	-940	-736
2008-'13	900	-820	-256	-1,720	-1,156
2014-'19	770	-1,120	-352	-1,890	-1,122
2020-'25	910	-1,230	-378	-2,140	-1,288
2026-'31	700	-1,350	-420	-2,050	-1,120
2032-'37	730	-1,400	-440	-2,130	-1,170
2038-end	710	-1,400	-440	-2,110	-1,150

Attachment 11
Expected Duration of Transfer Agreements by Risk of Early Termination



Attachment 12

Present Value of Income Generated by Non Fallowing Program

(millions '01$)

Annual Risk of Early Termination	*Expected Duration (years)*	*Employee Compensation*	*Proprietor Income*	*Total Local Income*
0%	75	$531.1	$181.7	$712.8
1%	53	$416.6	$144.6	$561.2
2%	39	$337.0	$118.6	$455.6
3%	30	$279.7	$99.7	$379.4
4%	24	$237.2	$85.6	$322.7
5%	20	$204.4	$74.6	$279.0

Attachment 13

Present Value of Income Losses from Land Fallowing

Annual Risk of Early Termination	*Expected Duration (years)*	*All Crops Fallowed*			*Alfalfa Only Fallowed*		
		Employee Compensation	*Proprietor Income*	*Total Local Income*	*Employee Compensation*	*Proprietor Income*	*Total Local Income*
0%	75	-$402.2	-$295.8	-$698.0	-$54.1	-$109.9	-$164.0
1%	53	-$296.4	-$217.9	-$514.2	-$40.0	-$80.9	-$120.9
2%	39	-$225.1	-$165.4	-$390.5	-$30.5	-$61.4	-$91.9
3%	30	-$175.6	-$129.0	-$304.6	-$23.8	-$47.9	-$71.7
4%	24	-$140.4	-$103.1	-$243.4	-$19.1	-$38.3	-$57.3
5%	20	-$114.3	-$83.9	-$198.2	-$15.6	-$31.1	-$46.7